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Steel Supplies

IT is too early to predict the effect of the recent agreement with the U.S.A. on the supply of the equivalent of something over 1,000,000 tons of steel to this country; it seems clear, however, that supplies during the next few months will not be increased. Recently the Government forecast a steel deficiency of some 1.5 million tons for 1952 in relation to estimated needs. This is considered a high figure in some quarters, given other factors restricting industrial production, such as manpower. Supplies for British Railways are sponsored by the Ministry of Transport. With the reintroduction of the control of availability of steel, an allocation had been made for the first period of this year, namely February and March, with a provisional figure for the second quarter. The agreement with the U.S.A. will probably cause reconsideration of this amount, which may be an indication that railway requirements are considered vital—as indeed they are. Whatever the figure eventually is, it still will be insufficient for various reasons. The Government is scaling down the needs of all steel users, and it is safe to say that it envisages the utmost economy in the use of steel as in other matters. It is fundamental to the welfare of the nation that railways should be allowed a sufficiency of the metal to permit them to function efficiently. It is difficult to guess what the

Government has in mind and what its standards of essential use are in relation to railways. Besides their basic contribution to the national economy and their strategic function, British Railways are part of a public utility which it is intended should pay its way. To do so, it must provide services both passenger and freight which are largely competitive. If the Government allocation of steel is so scaled down that the railways revert to something approaching wartime standards of speed, reliability, and comfort, they cannot function commercially. Against this, there are two factors: first, the fact that the manpower shortage has restricted maintenance and development on the railways as much or more than any other cause and, second, that steel supplies, later in the year from U.S.A. and improvement in the economic situation may not result in any great reduction in the work of improving its system which the Railway Executive has taken in hand since nationalisation.

Sectional Council Meetings

THE negotiating machinery between the Railway Executive and British Railways staff described in detail in our issue of June 24, 1949, continues to function smoothly in an unspectacular way. Thus in December, the five Sectional Councils in each Region met under the chairmanship of the Chief Regional Officer concerned, and Members of the Railway Executive were present, besides Regional officers, and the trades union headquarters were invited to send representatives, which they were able to do in most cases. In accordance with their terms of reference, the Councils discussed questions of wider range than those covered by the Local Departmental Committees at the next lower, and the staff questions that fall to the Railway Staff National Council at the all-line, level. The subjects raised at the Sectional Councils varied in the Regions, but in all cases included general efficiency, the speeding up of traffic movement, and staff morale. It is too soon to see the results of these discussions between the management and the elected representatives of the men. They are certainly useful in allowing officers to gauge the general feelings of the staff, and in lessening the apparent remoteness of Members of the Railway Executive and of Regional officers by enabling the staff to meet them personally and express their views.

Staff Recruitment

BRITISH RAILWAYS' greatest staff problem remains manpower shortage, especially in the operating and civil engineering departments. Although the situation has been kept in hand, it is still precarious. The heavy freight traffic movement in December was achieved largely through extensive overtime and Sunday work by the men available—expensive in both wages and, eventually, efficiency, for the extra effort makes heavy physical demands on the staff. Recent steps taken by the Railway Executive to recruit staff so as to complete the establishment—the only satisfactory solution of the manpower problem—include raising the maximum age for recruitment of clerks from 30 to 45, and press advertisements, some of which are reproduced on page 109 of this issue. Railway staff recruitment posters have been a familiar sight at stations and elsewhere ever since the war, and recent advertising addressed to the general public has stressed the vital part in the national economy played by the railways as carriers of essential commodities. Recent press advertising combines the two, and appeals to the imagination of the potential recruit by showing how he—or she—can help in the important work of railway transport.

British Transport Commission Statistics

PASSENGER receipts of British Railways for the calendar month of October, 1951, at £8,026,000, were very slightly above those of a year before, and compare with £10,443,000 for September, 1951, which also exceeded very slightly the figure for September, 1950. The seasonal reduction in traffic, therefore, much more than accounted for

any increase in receipts caused by the London Passenger Charges Scheme, operative from October 1, 1950. There is a general similarity between the proportion of receipts derived from the different categories in September and October of both years. The position is quite different for passenger journeys, which reflect the operation of the London Charges Scheme. As between September of 1950 and 1951, full-fare journeys on British Railways rose 43 per cent. (182 per cent. in the Eastern Region, which includes the Tilbury Section); as between October of either year, there was no difference not due largely to increased excursion facilities. In the case of London Transport, for the four weekly Periods 10 and 11, which roughly correspond respectively to the calendar months of September and October, railway passenger journeys as between the two years show little change in full-fare travel in either four-week period.

Overseas Railway Traffic

FOLLOWING a £42,950 advance to £139,920 in the week ended December 28, Antofagasta (Chili) & Bolivia receipts for 52 weeks amounted to £6,526,260. As compared with the equivalent period of 1950, aggregate traffic at December 28, 1951, were up by £2,836,756 and a more recent statement shows total approximate receipts for the year to have been £6,602,890. The improvement has continued during 1952, with a £57,330 advance to £158,790 in the week ended January 11. Receipts for the first four days of 1952 are contrasted with seven days of the previous year, but by January 11, aggregate traffic were £43,040 higher, at £221,260. Gold Coast receipts rose by £26,714 and £38,503, respectively, in the months of October and November, so that by November 30, traffic for the current 34 weeks had improved by £135,872 to £2,095,480. Receipts for the two months amounted to £288,141 and £347,307. Tatal traffic for December were up by \$721,900, at \$2,157,000, and aggregate receipts for the half year were \$12,277,000, as compared with \$9,256,800 for the same period of 1950-51.

A Difficult Year for the S.A.R.

ALTHOUGH in 1951 the South African Railways were not always able to meet transport demands promptly, they succeeded in establishing record traffic totals. In his report, Mr. D. H. C. du Plessis, Acting General Manager, said that his administration could not have foreseen accurately the present rate of expansion, but the buying and new works programme drawn up three years ago would shortly bring them abreast of all traffic needs. Criticisms of the railways for unavoidable delays in solving problems which at times "taxed human and material resources to the utmost," failed to take into account their many achievements and the steps being taken to meet requirements. In 1950-51 the tonnage of all classes of traffic was 62,133,709, a record, and 3,462,025 tons more than in the previous year. Wagon loadings, 5,203,773, and train and engine miles, 107,836,153, were both records. On five occasions since March 31, 1951, weekly earnings exceeded £2,000,000. These figures are proof of the extent to which the railways are keeping pace with national development.

S.A.R. Capital Expenditure

THE unchecked rise in costs on the S.A.R. means large capital expenditure. Orders placed for locomotives, for example, exceed £22,000,000. Improvements in handling facilities, and mechanisation are helping to solve the problem of dealing with the large quantities of goods at the harbours and in yards. On November 26 fast goods services, similar to that which has operated for some time between Cape Town and Johannesburg, were introduced between Johannesburg and Durban, and Johannesburg and Port Elizabeth. Staff relations remained excellent, marred only by a "go slow" strike of artisans, which added to congestion at some places. During the year the Government decided to apply improved pay and service conditions to all railway staff; the sum involved was more than

£6,000,000. The wage and salary bill for 1950-51 was £64,082,000, including overtime and cost-of-living allowances; that for next year will be more than £72,000,000. The railway administration hopes that the improved conditions will bring in the recruits needed to end the labour shortage now retarding development and hampering work in some grades. The impressive number of new works opened during the year included the new Kazerne Yard, the Grootvlei-Redan line, extension of electrification on the West Rand, and part of the new station at Johannesburg. The total which the administration intends to spend on major works in hand is £65,899,000.

United Railways of the Havana

TWELVE months ago the President of Cuba announced his intention to seek nationalisation of the British-owned United Railways of the Havana. Subsequent statements by the President have appeared to confirm this intention. But at the same time, Mr. R. G. Mills, Chairman & General Manager, in his statement issued with the report and accounts for the twelve months to June 30, 1950, states that he is unable as yet to envisage any definite outcome either in regard to nationalisation or to purchase of the railway by the sugar mill owners or any other party. Mr. Mills is hopeful however that as a result of further representations they would know soon whether the present Government intended to implement the various public announcements by the President to nationalise the railway before the Cuban elections in June. The fact remained that, owing to the exhausted physical condition of the railway, some steps must be taken soon to alleviate a situation rapidly approaching when difficulties of operation would progressively limit ability to maintain service. From information that has come to hand recently it would seem that the National Association of Sugar Mill Owners is reluctant to define its policy.

Summer Passenger Services

MEMBERS of the Association of Health & Pleasure Resorts decided last week to protest against the projected restriction of the summer passenger timetable this year to the period June 30 to September 13, in view of the campaign long since waged by national and local organisations to encourage holidays in the early and late summer so as to ease the burden in July and August. It is hard not to sympathise with this view; but in the light of other factors governing holiday dates, such as school holidays and the force of habit, it is questionable whether the existence or otherwise of extra trains has much effect. Both 1950 and 1951 were wet summers, and the slight increase in passenger journeys over 1950 in June and September last, with the summer services curtailed at either end, may have little significance in the light of the increase in excursion traffic. Failure to increase the train service, in so far as it may result in overcrowding, is deplorable as much from the railways' as from the travelling public's point of view; but the restriction of the service—if it comes about, for the final decision has not yet been announced—is due, as it was last year, to the necessity to free train crews and other operating resources for the vital goods traffic arising out of rearmament and the export drive.

Ultrasonic Flaw Detection

THIS country gave the lead in developing ultrasonic flaw detection in metals and the British main-line railways and London Transport were among the first large users to appreciate the possibilities of this method of locating minute hair-line cracks which could not be detected by the X-ray method. Ultrasonic flaw detection saves time and trouble as it enables every section of wheels and axles to be examined without dismantling the bogies. The instruments are easy to operate and mechanics can soon be taught their use. This method originated during the war and elsewhere in this issue its developments are described. The possibility was first examined of adopting the principle applied to the development of echo-sounding apparatus for use at sea, when it was found that, applied to flaw detec-

tion in metal, this method gave promising results. Indeed, whereas with previous methods the range of detection even for gross defects was only 6 in. to 8 in., the new method exposed hair-line cracks at a range of many feet. Among those who collaborated with the manufacturers, Kelvin & Hughes Limited, in carrying out research into the application of ultrasonic flaw detection, were the railways, and their investigations into its possibilities were completed about 1944.

British Railways Second Standard Pacific

CLASS "6" Pacific locomotive No. 72000, recently built at Crewe Works for service in the Scottish Region, is the first of a series of ten similar engines to be built during this year. The class is the second of three standard Pacific types decided on by British Railways, and though largely identical with the Class "7" engines, is the smallest of the three types. Like the "Britannia" engines, the Class "6" are an entirely new design, though, naturally, they contain a number of features from former company practice. Except in minor details the Class "6" chassis is the same as that of the larger Class "7" engines, but the cylinders are 19½ in. dia. and a lighter boiler of reduced capacity has assisted in keeping the maximum axleload down to 19 tons. The new class should prove useful where a more powerful engine than a 4-6-0 is required, but where Class "7" engines are prohibited, and it has a route availability at least as good as the various Regional Class "5" 4-6-0s. The first five engines are to be allocated to Polmadie for running between Glasgow and Carlisle and possible working to Manchester; the second five will go to Carlisle Kingmoor for working between Carlisle and Glasgow, and possibly also onwards to Perth.

Passenger Fare Proposals

A REDUCTION in British Railways ordinary third class single fares from 2.44d. to 1.75d. a mile until January 1, 1953, and 2d. a mile thereafter, a minimum fare of 2d. on London Transport buses and railways, and an increase of some 20 per cent. in season ticket rates on a standard basis throughout the country are the main alterations proposed last week by the Transport Tribunal after its consideration of the Passenger Charges Scheme, 1951. The Tribunal conclusions are summarised elsewhere in this issue.

They do not constitute an award and have no legal effect until they have been embodied in a detailed amended passenger charges scheme, and that scheme has been confirmed by the Tribunal. In that event, it would necessarily involve supervision of the London Passenger Charges Scheme in force since October, 1950. The fares, moreover, proposed are maxima which the British Transport Commission may not necessarily see fit to charge. An existing case is the British Railways monthly return fare, which is below the statutory maximum of double the single, and therefore, can be—and recently has been—increased without reference to the Tribunal.

The Tribunal envisages a prohibition on the B.T.C. raising any fare by more than 42 per cent. for a year after the scheme comes into force, with certain exceptions in the lowest fares. The object of this is mitigation of the hardships which might be caused if all sub-standard fares now in force were to be brought up immediately to the permissible maximum. The reason for reduction of the ordinary third class single railway fare first to 1½d., and then, after January 1, 1953, to 2d. a mile, is not clear. It would seem to involve considerable loss of revenue from railway sources. Against that, the Tribunal doubtless has taken into account the deterrent effect of the present 2.44d. a mile railway fare in relation to intensive bus competition at sometimes considerably lower fares.

As stated, monthly return fares are an optional concession, and can be readily adjusted in the light of motor-coach competition and other factors. The allusion to second class railway fares applies to certain Continental

boat trains. There seems to be no good reason for limiting ordinary first class single fares to 50 per cent. in excess of the third class. With the third class fare 2d. a mile, business men and others in certain circumstances may well be prepared to pay more than another penny a mile for the extra comfort.

Halfpennies, the Tribunal suggests, should disappear from London Transport bus and underground fares. There would be no 4d. bus fare, and the rates for London would be 2d. for one mile, 3d. for two, 6d. for four, and 8d. for five miles. Whilst the hardship resulting from this is not great the psychological effects can hardly fail to be, and the proposal is bound to arouse widespread opposition. Nevertheless, in the amended scheme, these factors presumably have been taken into account, and if put into account it should bring in the additional £17 million in a full year envisaged in the original Passenger Charges Scheme, 1951.

It is now nine months since the British Transport Commission first lodged the scheme. Since then, wages and prices have risen, and any economies resulting from it are likely to have been swallowed up in rising costs before the scheme is finally approved. This factor has been borne in mind, though the proceedings before the Tribunal may well have proved longer than was anticipated.

Fifty Years of the Nigerian Railway

THE Nigerian Railway had its beginning in 1901, when on March 4 the first part of the Lagos Government Railway, the 123-mile section between Iddo (Lagos) and Ibadan, was opened. The growth of the railway in fifty years to its present status as the second largest in the colonies, with a route mileage of 2,037, has now been described in an illustrated booklet* brought out by the administration, to which Mr. D. C. Woodward, the General Manager, contributes a foreword.

Between 1906 and 1909 the line was extended beyond Ibadan by sections to Jebba on the south bank of the Niger, and a train ferry was put to work across the river. Meanwhile the growing importance of Northern Nigeria, until 1914 separately administered, with Sir Frederick (later Lord) Lugard as Governor, emphasised the need for rail communication with the Niger, and thus the sea. Baro, on the Niger, more than 100 miles downstream from Jebba, was selected as the railhead, and the line was driven northwards for 350 miles through Minna and Zaria to the famous walled Hausa city of Kano, the starting point of the Saharan caravans. The final section of the Baro-Kano Railway was opened on January 1, 1912, the same time as a link between the two systems was formed by the completion of the 160-mile line from Jebba North to Minna, allowing through running between Lagos and Kano. The Lagos Government and Baro-Kano railways were amalgamated on October 3 of that year, and the combined system took its present title.

The great task of bridging the Niger at Jebba was next undertaken. The Jebba Bridge, opened in 1916, has a total length of 1,526 ft. and consists of seven 183 ft. spans and 30 ft. arches. Another important scheme begun at this time was the Eastern Railway to serve the Enugu coal-fields and a newly-founded deep-water harbour named Port Harcourt on a creek 40 miles inland from the sea. The project, which included heavy engineering works, was delayed by the war, and the line was not opened through-out between Kaduna and Port Harcourt, 569 miles, until April, 1927.

Throughout the 1920s and 1930s construction proceeded apace, and details may be found in a comprehensive article on the Nigerian Railway, with special reference to the motive power, in our October 21, 1949, issue. Among the schemes carried out soon after the 1914-18 war were new deep-water berths at Apapa, and new workshops at Ebute Metta, both near Lagos. The main line was extended from Kano through easy and fertile country to

* Nigerian Railway Jubilee: 1901-1951. By John Stocker. Lagos, Nigeria. Published by the Public Relations Office. 8 in. x 6½ in. 36 pp. Illustrated. Price 6d.

Nguru, 842 miles from Lagos. One of the most spectacular achievements of this period was the building of a great road-rail bridge over the Benue at Makurdi, on the Eastern line, in replacement of a train ferry; this structure is 2,624 ft. long overall.

In 1929-30 the steady progress which the system had long made culminated in the then record revenue of £2,716,246, but thereafter the world depression and the increase in competition by road and river transport hit it hard, and drastic cuts in staff had to be made. In 1936-37 there was a sudden unexpected increase in traffic which taxed the resources of the railway, and in 1937-38 operating receipts of £2,834,967 were made.

The war effort of the Nigerian Railway was considerable. At Apapa and Port Harcourt the monthly import tonnage rose by December, 1944, to more than twice the best pre-war total. Extensive works were required at both these ports. Despite the introduction of measures intended to deter passengers from travelling, passenger traffic increased, adding to the heavy demands of wartime traffic.

Early in 1943, the much-needed new locomotives and wagons began to arrive; they were invaluable but even so existing locomotives had to be pressed to the limit of service by dint of much improvisation. The staff co-operated admirably, working excessive hours yet still managing to undertake voluntary defence duties largely in their spare time.

There could be no relaxation after the war, for a major restoration programme to make up four years of all-out working had to be drawn up. At the same time demands on the railway continued to grow, making still harder the task of overcoming arrears of maintenance and aggravating the seriousness of the shortage of senior staff. The rising cost of labour and materials has greatly increased operating expenditure, severely offsetting the increase in receipts—£6,000,000 in 1949-50—and causing some concern about the financial situation.

Nevertheless, it has been necessary to provide for eventualities; the renewal programme is going ahead as well as funds permit and important capital works have been or are being completed. Particular attention is being paid to improved efficiency and economy of operation. Revision of locomotive workshops methods to improve the out-turn of repaired locomotives is being investigated. An important change made last year in the interests of efficiency was the establishment of a new Operating & Commercial Department under the control of a Chief Superintendent, to which the running side of the Mechanical Department has been transferred.

Ulster Transport Authority

THE third annual report of the Ulster Transport Authority, for the year ended September 30, 1951, showed a trading loss of £129,677, or £83,956 less than the loss for 1949-50. On railway services there was a loss of £285,873 compared with £323,098 up to September 30, 1950, and £400,202 up to September 30, 1949. Road passenger operations showed a profit of £170,242, and road freight operations a loss of £27,913. Gross railway earnings for the year were £1,055,485, a decrease on the previous twelve months of £93,701; expenditure decreased by £130,926 to £1,341,358.

Comparison with the previous years' working must take into account the fact that the Northern Counties Committee Railway was absorbed halfway through the first year, and that sharp rises in the cost of materials, wages and charges have taken place. Pay increases and improvements in conditions of service have cost the Authority nearly £200,000, and further applications for higher wages are expected to cost another £260,000. During the second operating year, railway passenger services were withdrawn from 141 miles of line and freight services from 126 miles. These changes had a much greater proportionate effect on rail than on road results.

The report states that the net revenue position as a whole continues to be unsatisfactory, mainly because the

economies realised from the integration of road and rail activities and the withdrawal of services from sections of the railway system have been more than offset not only by the substantial increase in wages and cost of materials already mentioned but also by increased taxation, particularly on petrol and diesel fuel; and the reduced volume of traffic.

Some of the principal results for the past three years are given below:—

	1949 £	1950 £	1951 £
Railway passenger traffic	527,821	613,587	556,871
Rail and road freight traffic	1,491,742	1,646,349	1,694,482
Parcels, luggage, etc.	126,485	197,972	189,964
Bus services	2,895,277	2,879,428	2,863,105
Hotels and catering	186,111	260,865	282,741
Gross revenue	5,227,536	5,598,201	5,587,163
Expenditure	5,211,503	5,853,640	5,757,831
Net operating revenue	52,303	213,633	129,677
Mileage, railways open	325	200	200
Mileage, bus services	2,517	2,575	2,582

Buses ran 34,309,722 miles, and made 98,622,677 journeys, a decrease of 706,449 miles and an increase of 1,077,162 journeys on the previous year. Passenger train mileage was 1,628,324 (decrease of 477,635) and journeys totalled 8,661,720 (decrease of 1,152,899). Road freight vehicles operated 12,439,959 miles, or 1,074,040 fewer. Rail freight mileage amounted to 319,145, a decrease of 51,356.

The experimental three-coach diesel set introduced on the Bangor line in August, 1951, has proved popular, and the extension of diesel traction, in an endeavour to reduce operating losses, is contemplated. A number of six-coach diesel sets is under construction; the trains will consist mainly of converted steam stock. Cessation of services on some lines made redundant some rolling stock; as much of it was due for scrapping the renewal programme was much lighter than otherwise it would have been.

Increased revenue is expected from the new policy of putting almost all available advertising spaces out to tender. Mechanisation of work and the merger of staff are among the economy measures introduced. Publicity has received close attention. The Authority is further developing a road-rail goods trailer system whereby a standard articulated road trailer can be run loaded on to and off a railway wagon by the power of the road tractor only. The boundaries of delivery districts were revised during the year, and at the larger stations where road depots also existed railheads were established, from which a joint delivery of road and rail traffic is now made.

Wagon Availability

THE statistics on p. 106 of this issue show that at the end of the four-week period to December 2 last the total available operating stock of freight vehicles on British Railways, excluding vehicles out of service for repair, was 1,033,578, or 12,555 more than a year previous. That does not give a complete picture as regards handling the major varieties of traffic. The latest available figures show that on December 15 there were in traffic 8,740 more wagons of principal types, that is, excluding special wagons of various types, than a year ago, which also is 4,300 more than a month previously. The carrying capacity of mineral wagons in traffic is estimated to have increased by 139,000 tons during the twelve months to December 15, 1951, which is equivalent to 10,300 more wagons of the average capacity of 13.5 tons.

WAGONS AVAILABLE FOR TRAFFIC ON DECEMBER 15, 1951

	1951	1950	Inc. or dec. 1951 over 1950
Open	288,252	280,762	+7,490
Covered	129,900	128,525	+1,375
Mineral	550,764	552,375	-1,611
Cattle	12,356	12,007	+349
Steel-carrying	41,019	39,882	+1,137
	1,022,291	1,013,551	+8,740

The shortages of merchandise wagons which now arise from time to time are mainly local and temporary, and not of major importance. There was, in December, a deficiency in the availability of mineral wagons greater than in November, but less than in December, 1950. This represents a reversal of the trend during October and November, when the deficiency was greater in 1951 than in 1950. Total mineral traffic originating in the four weeks to December 2 was 0.6 per cent. greater than a year previously, and in the preceding four weeks 0.4 per cent. greater. As to December, 1951, the indications in the light of receipts for the four weeks to December 30, which are over 20 per cent. up on the same period of 1950—with an increase in rates of only 10 per cent.—and of record heavy carryings of steel, are that the deficiency in mineral wagons may be attributed largely to increased traffic, though re-orientation of despatches, involving differences in mileage run, has not been taken into account.

The recent output of coal was high in the weeks before Christmas. It was not possible, in December, to supply enough wagons at the time required to avoid a loss of production of nearly 9,000 tons of deep-mine coal and the stacking of 122,000 tons (80,000 of it deep-mine). Most of these losses occurred during the peak production week ended December 15, and the following week, during the miners' spurt before Christmas.

Efforts made to enhance wagon availability have included weekend unloading, which is one of the objects pursued by the joint winter transport organisation described in our issue of October 12, 1951. Some 54,000 wagons were cleared at weekends outside normal working hours in December, a satisfactory achievement which reflects well on both railway men and traders. The aim of the Railway Executive, however, remains the current clearance of wagons during the week, thus avoiding extra work when the men should be resting.

The following table shows the great number of additional wagons which could be made available by reductions in turnaround time.

Week ended December 15, 1951			Average round-trip time (days)	Additional wagons available with average round-trip time reduced by :		
Type	Working stock	Loads forwarded		3 hr.	6 hr.	12 hr.
All types	1,018,363	778,346	7-85	16,200	32,400	64,800
Coal wagons	532,550	391,935	8-15	8,250	16,500	33,000

Clearances of coal wagons in the early part of December were slightly below 1950, but were much higher for the last three weeks of the month. Mention was made in our last week's issue of the record lift from mines on December 15-17, and high clearances were maintained for the rest of the month, as the figures below indicate. Between mid-December, 1950, and 1951, the average capacity of mineral wagons increased from 13.15 to 13.44 tons.

		1951		1950	
		Weekly	At weekends	Weekly	At weekends
December 3	...	323,392	39,639	329,732	39,856
" 10	...	328,979	42,332	329,877	44,723
" 17	...	333,212	46,356	329,230	44,719
" 24	...	324,676	40,855	480,603	35,159*
" 31	...	171,317	30,827		23,580

* Covers whole of Christmas period

All the above, in so far as it represents an improvement in dealing with freight traffic, was accomplished with operating grades reduced in strength far below what is adequate, in the long run, for efficient working, and imposed a strain on the depleted staff. The weather up to that time had been mild, and there had been no epidemic illness, but severe weather may cause difficulties in the next few weeks.

The American Railway Engineering Association

ON the North American Continent railway civil engineering interests are represented by a body corresponding in some respects with our Permanent Way Institution, but having wider ramifications and known as the American Railway Engineering Association (A.R.E.A.). It was founded in 1899, and is closely related to the Association of American Railways (A.A.R.), the important organisation consisting of about 360 member U.S. & Canadian railways. In fact, the work of the Construction & Maintenance Section of the Engineering Division of the A.A.R. is done by the various technical committees of the A.R.E.A. The organisation, activities, and achievements of the A.R.E.A. were recently described by Mr. C. E. R. Sherrington—Director of the B.T.C. Research Information Division and himself a member of the A.R.E.A.—in an address to the London Section of the P.W.I.

The A.R.E.A. is a body of individuals, he points out, and its object is the advancement of knowledge concerning the scientific and economic location, construction, operation, and maintenance of railways. It has a governing board of ten or twelve directors elected by the various railways, a whole-time secretary, and assistant secretary, and a research engineer. Investigations are carried out by (a) standing and sometimes special committees, (b) meetings for discussions on reports and papers, and (c) the publication of papers, reports and discussions. All conclusions reached are purely recommendatory. There are some 30 standing committees covering a wide variety of subjects; as the following list of some of them shows:—

STANDING COMMITTEES

Roadway and ballast	Iron and steel structures
Sleepers	Economics of location and operation
Rail	Wood preservation
Track	Uniform general contract forms
Buildings	Economics of labour
Wooden bridges	Co-operation with the universities
Masonry	Maintenance equipment
Highways	Clearances
Records and accounts	Waterproofing
Water service and sanitation	Impact and bridge stresses
Yards and terminals	

Appointments to committees are made by the board of directors, 10 per cent. of the committee members changing each year. Reports of committees are circulated and then discussed at the Annual Convention held in Chicago. The six or seven issues each year of the *A.R.E.A. Bulletin* circulated to members vary widely in size and content. A monthly *Newsletter* also reports the general activities of the association, work of committees, and personal items.

Qualifications for membership include five years' experience as engineer or officer of a railway, in charge of location, construction, operation or maintenance; a professor of engineering at a university; an engineer or member of a public board dealing with railway problems; an editor of a railway technical journal, or a consulting engineer with the equivalent of five years of railway experience. Life membership is possible for a member who has paid his dues for 35 years. Honorary membership is limited to ten holders and is a high honour reserved for persons of acknowledged eminence in railway engineering or management.

The three main spheres of study are (a) rails, (b) sleepers, and (c) bridges. Several committees deal with a variety of subjects, assisted by members specialising in each subject, rail manufacturers, and the research organisation of the A.A.R. and A.R.E.A. There is also the close co-operation of the universities on such matters as internal fissures, and an important recent achievement has been the study and recommendation of new standard rail sections. Consideration of sleeper problems has led to a reduction in the average number of renewals per mile of track annually from 300 in 1900 to 110 in 1950 despite increased traffic and loading. This result has been achieved by treating with preservatives, the use of soleplates—and later by increases in their bearing areas—careful specification and choice of timber, improved seasoning methods, and, above all, better track maintenance.

An outstanding accomplishment by the A.R.E.A. in

bridge design has been the standardisation of the live-load rating as expressed in Cooper's system. The Association specifications for steel bridgework are used throughout North America, and elsewhere. Standardisation has also been evolved for numerous other engineering practices and the research work carried out has been invaluable. The A.R.E.A. Manual now consists of over 2,000 pages and contains many recommended practices. The research side has made great strides in the last three years since the new research centre was established in Chicago. The research programme budget for 1948 totalled nearly \$400,000. Perhaps the most remarkable feature of the Association is the unfailing atmosphere of co-operation and goodwill that prevails throughout all its activities.

The C.P.R. During 1951

ALTHOUGH Canadian railways shared in the high level of business activity in Canada in 1951, on the Canadian Pacific Railway, whose estimate of tonnage to be handled during the year was about realised, an increase in working expenses, resulting from higher wages and costs of material and supplies, and the introduction of the 40-hour week, made net railway earnings \$10,000,000 less than in 1950.

The railways have again had to make application to the Board of Transport Commissioners for authority to increase their freight rates, but, as Mr. W. A. Mather, President, Canadian Pacific Railway, pointed out in his customary year-end review, after all outstanding applications have been granted, the increases in railway charges will have amounted to less than 60 per cent. above pre-war levels. Wholesale prices in general are now more than 140 per cent. higher, and the increases are most marked in commodities essential to railway operation. Wage rates have risen almost proportionately. The Canadian Pacific Railway is now engaged on a five-year plan which will involve an investment of \$400,000,000 in new motive power, passenger and freight rolling stock, and other facilities. This programme is by no means excessive compared with the needs to be expected if the nation is to continue its present rate of progress.

The company's substitution of diesel for steam locomotives has continued, and was extended to the section between Calgary and Revelstoke, over a strategic 262-mile section, including some of the heaviest gradients of the system. A total of 28 of the most powerful diesel units used in Canada were placed in this important service. A further 38 of them are due for delivery in 1952 to complete the dieselisation. To meet the constantly increasing demands of consignors, orders for some 3,575 freight wagons were placed for delivery during 1951, and additional orders for 4,250 wagons have been placed for delivery in 1952. The total capital outlay on new locomotives and rolling stock during 1952 will amount to around \$60,000,000. To improve the handling of perishable commodities, Canadian Pacific Railway transport experts and engineers worked closely with the National Research Council and others on a new type of mechanically-refrigerated van. Tests are continuing, and it is expected that the new van will considerably aid the efficient transport, often over transcontinental distances, of such perishables as fish, meat and fruits.

During 1951 the growth of the Canadian economy was reflected in heavier rail carryings of sand, stone, gravel, cement, iron and steel products, pulpwood, and paper. There was also a substantial increase in the volume of grain and grain products. Early in 1951, the 26,300-ton flagship of the Canadian Pacific fleet, the *Empress of Scotland*, made a series of seven cruises from New York to the West Indies and South America. The liner gained further distinction in November when Princess Elizabeth and the Duke of Edinburgh embarked at Conception Bay, Newfoundland, to return to Liverpool after their tour.

On the Pacific Coast two new vessels joined the fleet of the British Columbia Coast Steamship Service. The *Princess of Nanaimo*, a 6,000-ton composite car ferry and passenger ship, was placed in service on the busy 36-mile

stretch of the Gulf of Georgia separating Vancouver and Nanaimo, the principal distributing and transportation centre of Vancouver Island where the Canadian Pacific has already erected a new rail and ship terminal. The *Yukon Princess* went into service in the growing British Columbia coastwise trade. A new weekly steamship service to meet the needs created by large developments in the area was begun between Vancouver and Prince Rupert. Canadian Pacific Airlines continued to operate over 10,000 route miles of internal service, as well as regular overseas flights to Australasia. Auckland was added to the trans-Pacific itinerary which now includes Honolulu, Canton Island, Fiji Islands, Auckland, and Sydney. The company is the first airline in North America to place orders for jet airliners; two "Comets" of English manufacture are on order for delivery in 1952.

Indian Railways Lightweight Stock

MUCH interesting information on operating conditions in the Bombay suburban area was given by Mr. C. M. Cock, General Manager, Traction Department, English Electric Co. Ltd., during a discussion on Indian Railways lightweight coaches, at the Institution of Locomotive Engineers on January 16, brief reference to which was made in an editorial note last week. Mr. Cock, formerly Divisional Transportation Superintendent, G.I.P.R., said that industrial expansion during the war in the Bombay area led to very serious overcrowding of the suburban electrified services, quoting the following figures:—

	Originating passenger journeys (million)	Car miles (millions)	Ratio Cols 1-2
Southern Railway (1947) ...	302	227	1.3
Central Railways (1950) ...	144	20	7.2

When the design of the new stock was first mooted it was considered that it should be capable of good performance in both the inner suburban area, where stations are closely spaced, and on the outskirts where there were longer distances between stations. It was also envisaged that the stock should run to Poona and Igatpuri, distances of 119 and 85 miles respectively from Bombay, including the ascent over the Western Ghats. On account of the many speed restrictions on these routes a high degree of acceleration was necessary in addition to a fairly high maximum speed. The old suburban stock was able to maintain timings equal to that of the fastest expresses due to their speed of acceleration; neither were bankers required for ascents of 1 in 37 gradients on the Ghat sections. Train operating in the suburban area during heavy monsoons was extremely difficult.

Mr. Cock said that on one occasion Bombay had 24 in. of rain in 24 hr., of which 18 fell in 8 hr., and it was necessary that in design of rolling stock every precaution should be taken to prevent the ingress of water to traction motors, and so on. He considered that the introduction of roller bearings would lead to decreased maintenance and that sleeve bearings on the traction motors on the old stock were a source of anxiety, particularly on the pinion end, and a special packing was necessary to avoid failures. Sir William Stanier also took part in the discussion and said that a saving of one ton in weight should save approximately £10 a year in current. Therefore it followed that the new stock should be economical from an operating point of view. Colonel R. B. Emerson, General Manager of the G.I.P.R. at the time when the new stock was sanctioned, said he was glad that provision had been made for the conversion of the doors to air operating and at the same time expressed the opinion that, although objections were raised by the Operating Department, Advisory Committees, and the Railway Board, it was his opinion that, while the fitting of air-operated doors on suburban electric stock in India might lead to initial dislocations, it was the duty of railway management to educate the public.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Steel Supplies

January 12

SIR,—The dilemma of British Railways posed in the editorial on steel supplies in your January 11 issue reminds me of the line in a coster song, "E dunno where 'e are."

As you point out, the Government's proposed allocation of steel to British Railways will mean that the major reconstruction and modernisation work already behind-hand will have to be further postponed. Railwaymen will have the unsatisfactory job of "plugging up the holes to keep the vessel afloat." At the same time they will be subjected to uninformed and often irresponsible criticism for not making British Railways an efficient public transport system. Both management and workers deeply resent adverse comment when much of the blame should be borne by others.

Yours faithfully,
FRANK G. MOXLEY

177, Argyle Road, Ealing, W.13

Railway Carriage Design

December 17

SIR,—I am grateful to Mr. Lock for his speedy reply, in your December 14, 1951, issue, to my query about the figures on the doors of the new third class sleepers. I am sure that their provision, once widely known, will be most useful, especially when all old stock has been repainted.

While I am on the subject of carriages, there are some points in Mr. R. F. Graveson's letter in your December 7 issue on which I would like to comment. I agree entirely that the widespread use of non-corridor coaches on quite lengthy journeys causes much inconvenience. The provision of carriages with lavatory accommodation but without vestibule connections at the ends has always surprised me. Presumably they are slightly cheaper to build, but their disadvantages surely outweigh any economy, at least in so far as the coachwork is concerned. The undergear may be a different matter, as I doubt if the majority of local non-corridor stock possesses suspension suitable for running at sustained high speeds.

Against the suggestion to provide more open carriages, I would like to raise a strong protest. The average English traveller has a considerable dislike of open carriages. While in a full compartment one only has to consult seven fellow passengers at the most, if one wants to alter the window opening, but it is clearly impossible to enquire of all those in an open coach before one adjusts the ventilation.

The fitting of tables to the majority of open carriages can cause additional annoyance. Few people wish to spend a whole journey squeezed between one and the back of the seat. When the Hotels Executive is in sight of achieving its aim to provide a complete refreshment service throughout the train, tables stored in the corridor could be fitted in each compartment when required, and subsequently re-stowed out of the way. The necessary fittings already exist in many compartment carriages.

The advantages of vestibuled stock listed by Mr. Graveson call for some comment. I doubt if many women are still afraid of travelling for fear of being molested. In any case, I have seen open corridor carriages in which there were only two points of access to the communication cord, one at either end. Vestibuled stock may not be safer in a fire—in a recent case the flames spread rapidly down the corridor. At present, damage to fittings occurs in non-corridor stock, but this may be due to the use of such stock in districts where this hooliganism is worst. Also, the revenue lost through passengers travelling without tickets must be small, as most stations are 'closed.' Many more inspectors would be needed to make checks in vesti-

buled local trains, and their wages would probably more than equal any fares collected. Where no alternative routes exist, one collector at each station could cover any number of passengers in many trains; far more would be required if the stations were of the open type, unless the train service were sparse.

My most serious quarrel with Mr. Graveson is over the tone of his remarks on the new Liverpool Street-Shenfield stock. Many of us are unconvinced that we would be happier in open carriages. Opposition to the electric trains came, not unnaturally, because the ratio of carrying capacity to seating capacity was higher than that of the steam trains they replaced. Open stock on suburban trains facilitates internal circulation, with a resultant increase in the rate at which passengers alight and board the train. Some of the latest Southern Region electrics combine the best of two worlds, as three coaches out of each unit are open, but the fourth is a traditional non-corridor design.

Yours faithfully,
P. W. B. SEMMENS

52, Belle Vue Grove, Middlesbrough

Percentage of Wagon Stock Under Repair

January 21

SIR,—An editorial on page 57 of your January 18 issue described a fall in the percentage of wagons under repair from 6.8 on December 2 to 6.3 on December 22 as one of the Railway Executive's "achievements in freight traffic." Actually the Executive is taking a long time to reach the percentage of 5½ which, according to the British Transport Commission's first report, it expected to attain by the end of 1949. In 1951 the percentage moved in much the same way as in 1950. Starting at 6.6 in January, it rose to 8.7 on August 12, when the wagon stock was 1,109,800 and, the number under repair 97,400. Each later period showed an improvement until on December 2 the stock was 1,109,200 and cripples numbered 75,600.

There was nothing exceptional about the "classified repairs" recorded for any of the 12 periods to December 2. Two factors influencing the position at that date were the delivery during 48 weeks of 34,000 new wagons and the withdrawal of 29,800 obsolete vehicles. In the 12 weeks ended December 2, the stock was strengthened by 9,550 of these new wagons and the exit of 10,220 "crops." It is not surprising that the number of wagons set aside for repairs fell to round about 70,000 in the last period of the old year.

The average percentage throughout the year is a better guide than the solitary figure for the close of December. Both are published for the U.S.A. railways. In 1950 the average for most railways was higher than the December figure; for the Pennsylvania Railroad the average was 15 per cent., compared with 11.3 per cent. in December, and the Santa Fe had an average of 4.5 per cent. and an end of the year figure of 4.1 per cent. The Railway Executive did well to reduce British Railways average from a shade over 8 per cent. in 1950 to a fraction over 7 per cent. last year.

Table D10 in *Transport Statistics* divided freight vehicles into "ex-railway owned" and "ex-privately owned." The first heading covers wagons installed since 1948 and is no longer appropriate. At December 2, about 6 per cent. of the so-called "ex-railway owned" vehicles was out of service, compared with 8.4 per cent. of the remaining wagon stock. It is heartening to recall that at the close of that busy year 1937 only 3 per cent. of the railway companies' freight rolling stock was unserviceable—20,140 vehicles out of 656,800.

Yours faithfully,
R. BELL

Frogna, London, N.W.3

THE SCRAP HEAP

Hitler's Train

Six of ten special railway coaches used by Hitler and Goering have been returned to the German Federal Railways by the United States authorities as a "Christmas present." Four of them will be converted into sleeping cars. The other two, used as the Nazi leaders' private cars, will become baggage vans.—From *"The Daily Telegraph."*

Lament for the G.W.R.

A letter received recently was in the form of verses written by Mr. R. W. Jennings lamenting the passing from the railway scene of the Great Western.

After mourning the loss of the G.W.R. chocolate-and-cream coach livery—"Must Midland red creep over all this isle?" he continues:—

"The mighty Kings now clad in hideous blue,

"Appear unkempt and dull in alien hue.

"The 'Counties,' 'Manors,' 'Granges,' 'Halls' alack,

"Shamefaced perform their work in dismal black.

"Only the veteran 'Stars' and 'Castles' fine,

"Display the ancient glory of the line."

The verses continue by attacking the officials who are carving up the railway map—"what do we want with Southern's twisted rails" West of Exeter—and concluded with these lines which will appeal to all true Great Western men:—

"Swindon, our very fountain head of power,

"Must share with Crewe its work in this dark hour;

"Pacifists now must build on Lancing's floor"



"They're only machines y'know, inclined to be a bit temperamental at times . . ."

[Reproduced by permission of the proprietors of "Punch"]

(We built the first, the *Bear*, in nineteen four).

"But worst insult of all, the senses reel. "That nightmare, mangy lion upon a wheel!" — From the *"Western Morning News."*

London Bus to Baghdad

The accompanying illustration, sent to us by Mr. J. C. Mertens, of the Iraqi State Railways, shows a London Transport STL-type bus loaded on a metre-gauge flat wagon of the Iraqi State Railways for conveyance from the port



London Transport bus en route for Baghdad

of Basra to Baghdad. The bus has been sold by the London Transport Executive to the Baghdad transport undertaking for trial service in that city.

The load is unusually tall for metre-gauge conveyance—17 ft. 6 in. from rail level. The wagon was worked from Basra in an ordinary goods train.

Railway Timekeeping

If our railway managers wish to make 1952 memorable for something other than higher fares they could hardly apply themselves to anything more popular than greater punctuality for trains. It is curious to look back to Lord Cardwell's Commission of 1853, which declared that unpunctuality added to the difficulty of railway servants in performing their duties and also increased the chance of mistakes. That was before the adoption of the block system. But another commission in 1877, basing its inquiry on a week in August, 1874, when summer traffic was heavy, found that of 110,711 passenger trains, 56,316 had reached their destination to time, 26,649 had been five minutes or less late, 19,532 had arrived within fifteen minutes of time, and 8,214 had been more than fifteen minutes late. The commission adopted a suggestion made by a committee in 1858 in favour

of "finding some cheap and rapid system by which sufferers from unpunctuality might obtain redress from the railway companies." The chances that 1952 may see the discovery of such a system seem farther away than ever. — From *"The Manchester Guardian."*

History Repeated

A correspondent writes to say that when glancing recently through a railway publication issued at the time of the Boer War, he read that Mr. James Holden, Locomotive Superintendent of the Great Eastern Railway, had deplored the fact that, because of the high rates in West Ham at the time, the company contemplated removing its Stratford Works to the country.

In an interview Mr. Holden continued: "The great increase in the price of coal is a serious matter . . . but unfortunately it does not end there. Metals of every description, and most of the stores we issue, have increased in price considerably."

Motorcar on Buffers

A car was carried for 700 yd. on the buffers of a goods engine which hit it at an Altrincham level-crossing recently. The driver was carried 650 yd. He jumped unhurt.—From the *"Daily Mail."*

Whisky Galore

When the *American Scout* sailed from the Clyde on January 7 she had over a million bottles of whisky stowed away in her holds. Three Scottish Region special trains brought the whisky to Clydeside from Kilmarnock, Perth, and Edinburgh, and 59 railway vans were needed to move the consignment to Glasgow. On one day more than 23,000 cases were carted from Stobcross Goods Station.

Tailpiece

Railway receipts were falling fast, Disaster seemed to loom quite near, This situation could not last— Then someone had a bright idea. "Economise! Retract! Hold back! These slogans keep us from the prize, This policy is off the track To win success we'll glamourise."

"Our lady porters we will dress In styles more suited to their chic, A beret worn with smooth finesse, A uniform that's smart and slick; The passenger will soon respond And rush to put his car away, For be she red-head, brunette, blonde, He'll come to see her every day."

One thing is lacking, one thing more— Hostesses working on each train Would cause the revenues to soar And bring a railway boom again. For nyloned glamour, full of grace, Would bring a multitude I ween; "Good-bye! For really I must race— I'm dated with the eight-fifteen."

A. E. C.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

PAKISTAN

South African Coal

A mission has gone to Capetown to arrange an immediate supply of South African coal. Stocks in Western Pakistan are stated to be only enough to run the railways for 45 days. Eastern Pakistan railways have 90 days supplies left.

India has supplied only 300,000 tons of coal in the last eleven months out of the 2,100,000 tons she had undertaken to supply in 18 months under last year's trade pact. Pakistan is likely to make permanent arrangements for coal supplies from South Africa.

INDIA

Passenger Train Speeds

Maximum permissible speed on broad-gauge lines is generally restricted to 60 m.p.h., with certain exceptions of 65 m.p.h. over the East Indian and Central (former Great Indian Peninsula) Railways. The present total of 904 miles covered at 45 m.p.h. or over, start to stop, consists of 29 daily runs totalling 782 and three weekly runs totalling 122 miles, divided between four railways, as the following table shows.

Railway	Electric miles	Steam miles	Total miles
Central (G.I.P.) ...	258	248	506
Western (B.B.C.I.) ...	—	260	260
Bengal Nagpur ...	—	78	78
East Indian ...	—	60	60
Total ...	258	646	904

The fastest run in the Dominion is electric, that of the up "Poona Express" (all classes) from Kalyan to Dadar, on the former G.I.P.R., 28 miles in 31 min., or 54.1 m.p.h. The next fastest is steam, once weekly, also on the former G.I.P.R., of the Bombay-Agra "Janata (People's) Express" from Bhopal to Bhilsa, 34 miles in 40 min., or 51 m.p.h. The rest at over 45 m.p.h. are largely on the former G.I.P.R. electric lines, but include steam runs on the Western (former Bombay Baroda & Central India broad-gauge) Bombay-Baroda, East Indian (former Oudh & Rohilkhand) Benares-Lucknow, and Bengal Nagpur lines.

SOUTH AFRICA

S.A.R. and Van Riebeeck Festival

The railways will take a prominent part in the celebrations to be held in Cape Town in commemoration of the centenary of the landing of Jan van Riebeeck at the Cape.

The development of transport in South Africa through three centuries will be traced by means of models to be housed in a railways pavilion on the festival site. The models of railway locomotives and rolling stock are being made in Great Britain. The pavilion will cover about 6,000 sq. ft. and will include a large entrance hall to serve also as an information office. The

Festival Committee will also have the use of new railway goods sheds on Cape Town foreshore.

Return tickets at excursion rates are to be issued from all stations to Cape Town. There will be concession rates for party travel.

ARGENTINA

Transfer of Stations and Lines

The two stations of Ingeniero Brian and Bullrich, with their numerous private sidings, which had been cut off from their parent line on the lifting of the Villa Luro branch have been transferred from the Sarmiento to the Roca Railway.

The Argentine Transandine Railway, administered formerly by the San Martin Railway, has been transferred to the General Belgrano Railway.

Authority has been given for the lifting of the branch line connecting Chacarita East Junction of the San Martin Railway and the Colegiales Junction of the General Mitre Railway.

VENEZUELA

New Railway

A large development programme to be carried out by the Orinoco Mining Company includes the dredging of the Macareo channel and Orinoco River to a point where the Caroni River flows into it. At this point will be built the port of Puerto Ordaz, which vessels of deep draught will be able to reach. A standard-gauge line 95 miles long will be built from Puerto Ordaz to Cerro Bolivar. Electric locomotives will haul wagons capable of carrying 90 metric tonnes each.

IRELAND

Wagons for Chilled Meat

C.I.E. is building a batch of specially-insulated wagons for the transport of chilled meat to the ports. The order, for 25, is being carried out in the Limerick (Roxborough Road) wagon yard of C.I.E., and four have so far been completed. This is the first time that such vehicles have been built in Ireland.

Machinery Transporter Wagon

Coras Iompair Eireann has completed the manufacture at Inchicore of an 80-ton machinery transporter wagon. The need for its construction arose from the post-war increase in constructional works, particularly erection of large power stations, land reclamation and similar projects, requiring the transport of excavators and transformers. Machinery in one piece, up to 80 tons, may be carried by the new wagon over most of the C.I.E. system.

The overall length from buffer to buffer is 72 ft. 2 in. An innovation is the four-axle bogie. The bogies and underframes were fabricated completely

from welded structures. In appearance the wagon resembles the well wagons built by the L.M.S.R. for the conveyance of military tanks during the war.

Irish Railwaymen's Union

Final details of the changeover by the 10,000 members of the National Union of Railwaymen to a new Irish union will be settled at an all-Ireland conference of the union to be held in Dublin on February 7. The conference will adopt its new constitution, appoint its officers and decide its headquarters.

The suggestion that an Irish union should be formed was made in 1945. In 1946 some of the functions reserved to N.U.R. headquarters in London were handed over to an Irish negotiating committee. This arrangement was continued as an experiment for five years. Last year at the end of that term it came up for review. A special conference was held, and it decided not to break away. At the annual delegate conference of the union, the executives recommended that the Irish members should be helped to set up their organisation.

C.I.E. Tourist Plan

As the result of the publicity campaign launched in the U.S.A., Great Britain and the Continent last year, C.I.E. hopes to attract thousands of additional tourists to the Republic of Ireland this year. The publicity campaign is being run in co-operation with the Irish tourist organisations. For early visitors, C.I.E. plans to run coach tours from March 2 until May 4 at a cost of £15 5s., compared with £17 for comparable tours in the summer.

C.I.E. Electricians' Strike

The effect of the continued strike of C.I.E. electricians was shown when on January 17 Dublin cross-channel dockers decided, in support of the strikers, not to handle goods consigned to and from C.I.E.

The electricians' strike, now in its 28th week, shows no sign of an early settlement. The men are claiming an hourly rate of 3s. 7d. an hour (fixed by trade union agreement in Dublin and provinces) instead of 3s. 4d. an hour paid by C.I.E.

FRANCE

Milk Traffic from Le Mans

Some 12,000 litres of pasteurised milk in bottles are despatched to Paris daily from a pasteurisation plant in Le Mans. Because of the necessity for frequent transhipment if the traffic went by rail and for it to be transported at a maximum temperature of 5° C., the contract for handling the traffic was given to a road transport undertaking. Since October last, however, when the S.N.C.F. provided isothermic wagons and a wagon-carrying road trailer, the milk has been conveyed by rail.

Ultrasonic Equipment for Metal Flaw Detection

Method of locating hidden defects which enables every section of wheels and axles to be inspected without dismantling the bogies

(By a Correspondent)

IN all the principal locomotive and carriage works of British Railways and also in the Acton Works of the London Transport Executive, ultrasonic flaw detectors have become routine testing instruments. This convenient method of non-destructive testing is providing even higher standards of safety for surface and underground rail travel by the location of hidden flaws which cannot be detected by the X-ray method. This lead given by Britain is being followed in other parts of the world, and ultrasonic detectors have since been adopted as standard equipment for railway workshops in, among other countries, France and Argentina.

Origin of the Method

Like many other inventions, ultrasonic flaw detection originated during the war, when it became urgently necessary to develop a method of discovering the extremely small hair-line cracks which might cause the failure of armour plate, projectiles, engine parts, raw materials, and so on. In November, 1939, the Hair-Line Cracks Subcommittee of the Iron & Steel Institute considered reports on the work of Russian investigators, who claimed to be able to demonstrate the existence of cracks in steel by passing supersonic waves through the specimen, and detecting the shadows caused by the interruption of the beam.

Having had many years of experience with supersonic devices, the firm of Henry Hughes & Son Ltd., now Kelvin & Hughes Limited, was invited to investigate these claims, particularly the Shadow method developed by Pohlman. The investigators soon succeeded in establishing that gross defects could be detected by this method, but that hair-line cracks could not, the reason being that surface irregularities caused far greater variation in supersonic transmission than did small hair-line cracks. Thus the detecting device had to discern a minute diminution in a relatively very large amount of energy despite the presence of large fluctuations caused by surface and other irregularities.

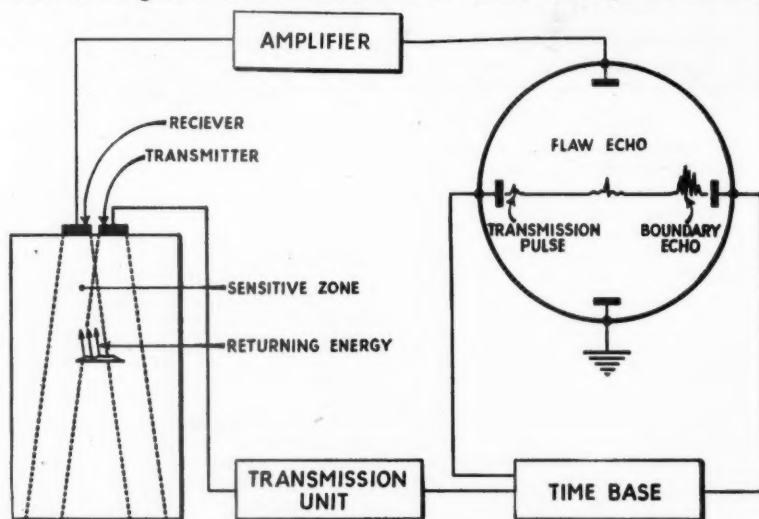
It was evident therefore that a fundamentally different method of approach to the problem was required, and the possibility was examined of using the principle successfully applied by the same firm to the development of echo-sounding apparatus. When soundings are taken by this method, energy is sent out in the form of a very short pulse, concentrated into a narrow beam directed towards the seabed. Should this pulse encounter a submerged object the echo reaches the surface earlier than that from the seabed. In examining a metal specimen for a flaw, the thickness of the metal is equivalent to

the depth of the sea, and any defect below the surface will reflect the energy in the same manner as a submerged object in echo sounding, enabling the echo to be distinguished from that reflected from the boundary of the specimen because of its earlier arrival.

Detecting Hair-line Cracks

Applied to flaw detection in metal, this method gave promising results, and it was soon found that, whereas with previous equipment the range of detection even for gross defects was limited

ciate the possibilities of ultrasonic flaw detection were London Transport and the British main-line railways. Early experiences by the makers in the field of axle testing included a demonstration given at Acton Works. The representatives of the firm concerned were asked to examine two wheels and an axle and they immediately discovered a large crack directly under the hub of one of the wheels. The probes were then applied to the other end of the axle and confirmed its presence. In some trepidation the engineers reported their find-



Schematic diagram of flaw detection apparatus

to 6 in. to 8 in., the new method could detect minute hair-line cracks at a range of many feet. The apparatus was quickly developed into a portable form and arrangements were made to supply units to the major steel producing plants in Britain. The Ministry of Aircraft production then acquired several sets for use in factories producing aircraft metals and instruments were supplied to various research establishments. Conferences between the Hughes research staff and the principal users were held at frequent intervals.

During the past eight or nine years there has been continuous development by the makers, whose team of research workers includes metallurgists, electronic engineers, designers, and field-workers concerned with the application side of flaw detection. This work has widened the range of applications by the provision of additional units such as filters, high power transmitters, and special probes. All the essential results of this field research are reflected in the design of improved instruments for flaw detection.

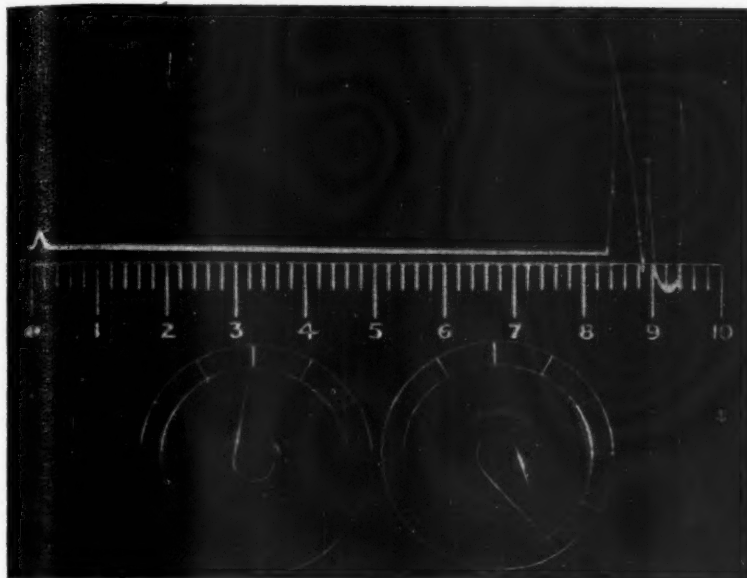
Among the first large users to appre-

tings to the Chief Mechanical Engineer since it seemed improbable that such a very large defect could exist. They were then informed that, so as to provide a convincing test for the instrument, the axle at the wheel seat had been sawn through, the cut being concealed by the wheel hub so that no evidence could be seen by superficial examination!

Already the British main-line railways were making extensive use of the latest available methods such as X-ray equipment, magnetic surface crack detectors, fluorescent detectors, and so on. In accordance with their policy of investigating any development which might contribute to a further improvement in efficiency or safety they were greatly interested in the new invention and demonstrations were invited.

Research by Railways

In collaboration with the manufacturers the railways carried out a comprehensive programme of research and development in the application of ultrasonic flaw detection to the avoidance of any flaws in important details of rail-



Record of cathode-ray tube showing trace resulting from tests on an unflawed article. The peak on the left is the transmission impulse indicating the surface of the material and that on the right is a boundary echo from the bottom of the test-piece

way equipment. Investigations into the possibilities of this method finished about 1944 by which time it had been conclusively established that the instrument with various modifications and improvements resulting from co-operative research gave a convenient and efficient means of non-destructive testing. The instruments were then handed over to the Chief Mechanical Engineer to use as tools in the investigation of possible flaws in mechanical details and they are also being used for research purposes in the railway workshops at Derby and elsewhere.

Economies Resulting

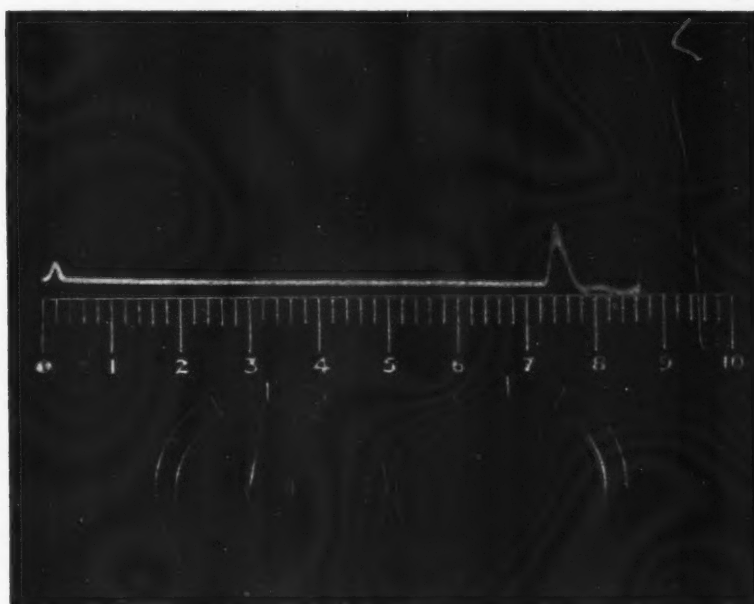
Before the introduction of ultrasonic detectors it was necessary to dismantle the bogie and remove the wheels from the axles to carry out a thorough examination with existing tools. The use of ultrasonic methods allows every section of the wheels and axles to be rapidly and thoroughly inspected without dismantling the bogies, the saving in time and trouble being thus considerable. Vertical probes have been specially designed for testing such items as axles where great depth is required and their effective surface area is 2 cm. The instruments are so simple to operate that mechanics can quickly be trained

to use them, and another important advantage is portability.

Pipe porosity, hair-line cracks, slag inclusions, blow holes, laminations, fatigue cracks, and welding flaws are among the many defects which can be detected by this equipment. The X-ray method requires that the flaw should be several per cent. of the thickness of the sample whereas a supersonic echo can be obtained from cracks of only molecular thickness.

CUBAN RAILWAYMEN REFUSE TO HANDLE SUGAR TRAFFIC.—It is reported that the president of the Cuban National Federation of Railwaymen has stated that members of his union will not handle the coming sugar harvest until sugar manufacturers agree to pay the increased rates for carrying sugar products. The new freight rates guarantee the 40-hr. working week without reduction in take-home pay.

LONDON MIDLAND REGION FREE FILM SHOWS.—Over 170,000 people, more than ever before, saw films giving previews of holiday resorts, visits behind the scenes in railway workshops, and British industries at 1,450 shows given by the London Midland Region of British Railways in 1951. The L.M.R. library of films, many of them in colour, are lent without charge to clubs, schools, and social bodies.



Record from an unsound test-piece in which the impulse resulting from the flaw appears at a proportionate distance between the transmission and boundary impulses to that of the flaw in the material under test

SOFTWOOD TIMBER AND BOXWOOD LICENCES.—The Minister of Materials has granted an open general licence permitting any person to acquire and supply any softwood timber and boxboards not situated in the United Kingdom, the Isle of Man, or the Channel Islands. This licence supersedes earlier open general licences issued on October 11, 1950, and February

1, 1951, which permitted the acquisition and disposal of softwood, mining timber, and boxboards in a limited number of countries. The granting of this licence does not remove the restrictions on the import of softwood timber and boxboards, nor those on their acquisition, supply, and consumption in the United Kingdom. Importation of softwood will be in

accordance with the scheme at present in operation. At the same time the policy governing the granting of the necessary import licences for various boxboards remains unchanged at present. The acquisition, supply, and consumption of the various softwood are subject to the restrictions imposed by the Timber (Control) Order, 1951 (S.I. 1951 No. 1067).

Electrical Equipment for Southern Region Multiple-Unit Trains

Rebuilt-suburban four-car units fitted with a simplified method of control

THE first of the rebuilt suburban four-car multiple units to carry the new Southern Region, British Railways, standard electrical equipment has recently been completed at Eastleigh Carriage Works. The mechanical parts generally and the make-up of the unit are similar to the many all-steel units completed in the last few years, but some changes have been made coincident with the change in electrical equipment with the general object of improving operating efficiency. Buckeye automatic couplers are fitted at the outer

Each of the two motor coaches in the unit is powered by two axle-hung traction motors weighing about 1.9 tons each, both motors being carried in the leading bogie as hitherto. The acceleration has been increased to the maximum possible within the limits of adhesion with 25 per cent. of the axles of the unit motored, and the balancing speed has been raised as far as possible by the use of field weakening. It was not thought worth while to increase the proportion of motored axles for Southern Region conditions, where the aver-

coach, but an alternative supply can be taken in emergency from the motor coach next in rear in the train. The provision of motor generator sets and batteries for control and lighting has been the practice on Southern Region express stock, but with the exception of the experimental double-deck train, their application to suburban stock is new.

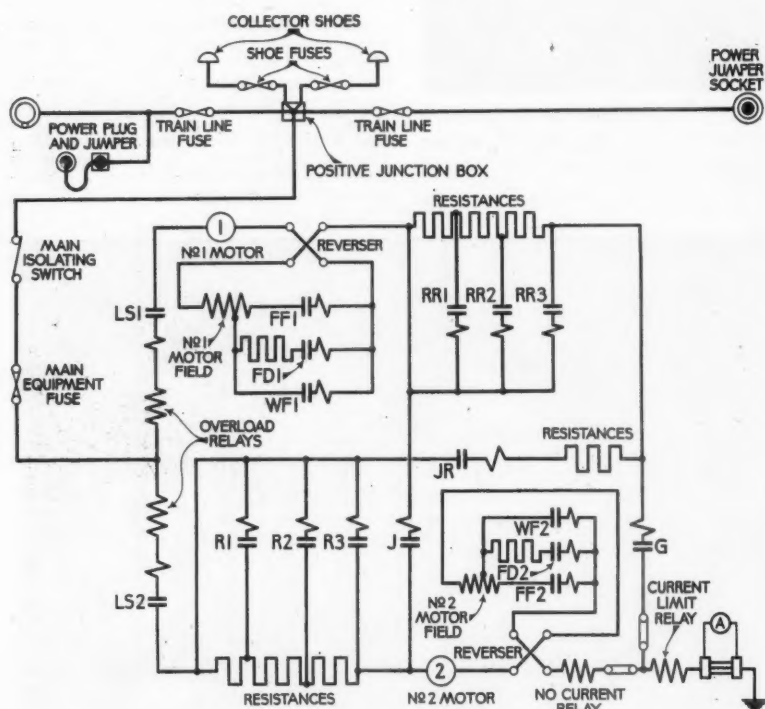
The Westinghouse non-interlocked electro-pneumatic brake with self-lapping controllers is provided, in addition to the Westinghouse automatic brake. The electro-pneumatic brake takes its supply in common with that of the control system from the motor generator set and battery. One of the most important features of the new equipment is the extreme simplicity of preparing a train for service and disposing of it afterwards. To prepare a train for service, it is only necessary to enter each driving cab in the train, release the hand brake, and close one switch. On reaching the cab from which the train is to be driven, one key is used to unlock the master switch handle incorporating in the master controller as well as the reversing and power handles.

When the master switch is closed, in addition to making an electrical feed available to the control circuits and electro-pneumatic brake circuit, the automatic brake is cut in by means of a relay valve. The brake isolating key is thereby eliminated and only the key already mentioned is needed to drive the train.

The master controller has four power notches—shunting; full series full field; full parallel full field and full parallel weak field. Automatic acceleration is catered for by a single-current limit relay on each motor coach whose characteristics are varied to cover series and parallel acceleration. Since the control circuits are battery fed, a no-current relay has had to be provided whose effect is to return the control equipment to the shunting position on loss of conductor rail supply, and to permit notching up to the state dictated by the master controller when power is restored.

A power bus line and a 27-core control line are carried through the train and are connected between the vehicles by two jumpers with plug and socket connections. At the outer ends of the unit these jumpers are duplicated. There are in addition two auxiliary jumpers carried between each motor coach and the adjacent trailer to feed the heating and lighting on the latter. Train heating is by totally enclosed heaters fed from the traction supply. These heaters are thermostatically controlled.

There are also two heaters in each



Power circuit diagram of rebuilt multiple-unit trains

ends of the unit, and these, in conjunction with the re-positioning of the brake hose connections above solebar level, make it possible to uncouple and couple units without going between the coaches at track level.

The driving cab has been redesigned without side doors, access being through a sliding door from the guard's compartment. An adjustable seat for the motorman has been provided, and his controls and instruments have been grouped into a desk with a knee-hole between brake and master controllers. A large cupboard at the rear offside of the cab contains all the auxiliary switches, fuses, and contactors, together with such items as the voltage regulator and the compressor governor.

age run between stops of a suburban train exceeds $1\frac{1}{4}$ miles.

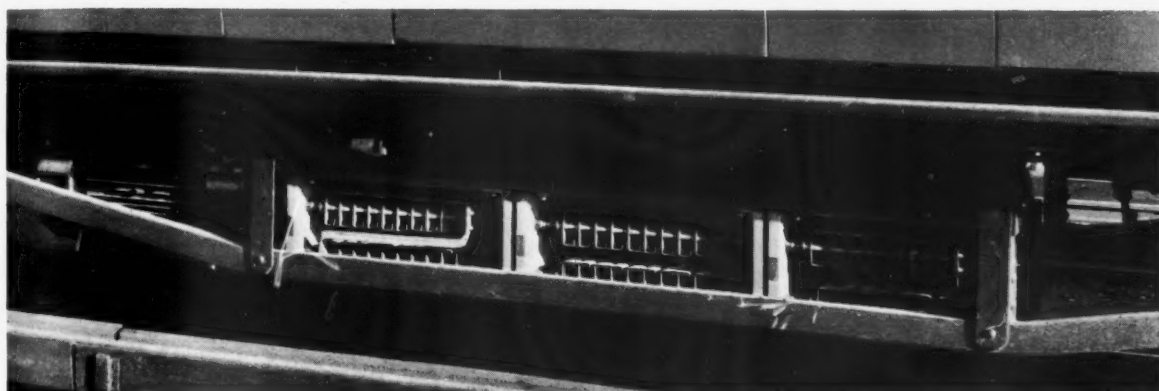
Control System

Every motor coach carries on the underframe a control equipment providing for series parallel control of the two motors with bridge transition and field weakening in two stages with the motors in parallel. Electro-pneumatic unit switches of a lightweight type having cam-operated silver butt auxiliary contacts are used, and the starting resistances are of expanded metal weighing only about one-third as much as the previous cast-iron resistances.

The control system takes a supply at 73 V. from the motor generator and battery, slung under the leading motor



Southern Region suburban multiple-unit train fitted with standard electrical equipment



Offside view of motor coach showing motor generator and starting resistances



View of installation of motor contactor with reverser on near side of motor coach

driving cab under the driver's control. The train lighting is by incandescent lamps fed at 73 V. by the motor generators. Half of the lamps are connected on the battery side of the reverse current contactor and will remain alight should the motor generator supply fail. All the lighting in the passenger accommoda-

tion can be controlled from any guard's compartment.

The whole of the electrical equipment has been so devised as to be applicable to two- or four-car units and to either suburban or express type stock, a different traction motor gear ratio being used in the latter case.

The stock has been designed and built under the direction of Mr. R. A. Riddles, Member of the Railway Executive for Mechanical & Electrical Engineering, and was constructed by the Carriage & Wagon Engineer at Eastleigh Carriage Works, the electrical equipment being manufactured and



Motorman's desk and controls

erected in the stock by the English Electric Co. Ltd. to the requirements of the Mechanical & Electrical Engineer, Southern Region.

The leading particulars are as follow:—

Traction supply	...	Outside conductor rail at 660 V. nominal
Length of four-coach unit	...	257 ft. 5 in.
Tare weight of four-coach unit	...	136 tons
Seating capacity of four-coach unit	...	386
Maximum speed	...	75 m.p.h. Initial acceleration 1 m.p.h.p.a. to 27 m.p.h.
Balancing speed on level tangent track	...	63 m.p.h.
Traction motor gear ratio	...	65 : 16
Motor wheel diameter	...	40 in. (new)
Horsepower at one-hour rating	...	980
Total nominal heating load	...	40 kW.
Total nominal lighting load	...	4.3 kW.

NEW AMERICAN STEAM LOCOMOTIVES.—Six large freight steam locomotives and 15 heavy steam shunting locomotives are to be built by the Norfolk & Western Railroad, reputed to be the only Class I railroad in the U.S.A. which does not use diesel locomotives for main-line power.

ROAD SAFETY TALKS.—The rising toll of road accidents was discussed with local road safety committees by the Parliamentary Secretary to the Ministry of Transport during a recent tour of the West of England and South Wales. This tour will be followed by similar visits to other parts of the country as Parliamentary business permits. Over the last three years, as a result of increased traffic, the average monthly toll of killed and injured on the roads has risen from 13,000 to over 18,000, an increase of about 40 per cent., and if this rate of increase is continued casualties this year may approach the prewar annual total of over 230,000.

British-Built Brake Vans for Australia



Part of a consignment of 200 brake vans built by the Metropolitan-Cammell Carriage & Wagon Co. Ltd. for the New South Wales Railways which left the Birmingham works of the company last month. The vehicles are being conveyed on wagons also built by the firm

Remodelling and Renewal Work at Port Eglinton Junction, Glasgow

Simplification of layout and provision of colour-light signalling



Port Eglinton signalbox which spans the up and down main lines near Cumberland Street Station. Relay hut below the low wall to the right

SITUATED immediately west of Cumberland Street Station, Glasgow, Port Eglinton Junction is the junction of the lines to and from Glasgow St. Enoch and Paisley Gilmour Street and Paisley Canal respectively. The overline signalbox operates the junction working and controls the lines

leading to General Terminus via Shields Bank and the connections to Shields Bank Depot and Carriage Sidings.

Considerable permanent way and signalling renewals were due at Port Eglinton Junction, and a comprehensive scheme of remodelling, including the removal of the crossings on the Paisley side of the box, has been carried out. Originally, consideration was given to a programme of modernisation and renewal, including the complete removal of Port Eglinton Junction box, with Shields Bank box, and the extension of the St. Enoch colour-light signalling to include the area controlled by Port Eglinton Junction. The work which has been completed represents a much abridged scheme but will fit into the major plan when it is proceeded with.

New Connections

The junction was double in that trains could be crossed in either direction, but in the simplified layout Port Eglington Junction has been remodelled to leave only the following connections: Up Main to Up Canal; Down Canal to Down Main; Up Canal to General Terminus; General Terminus to Down

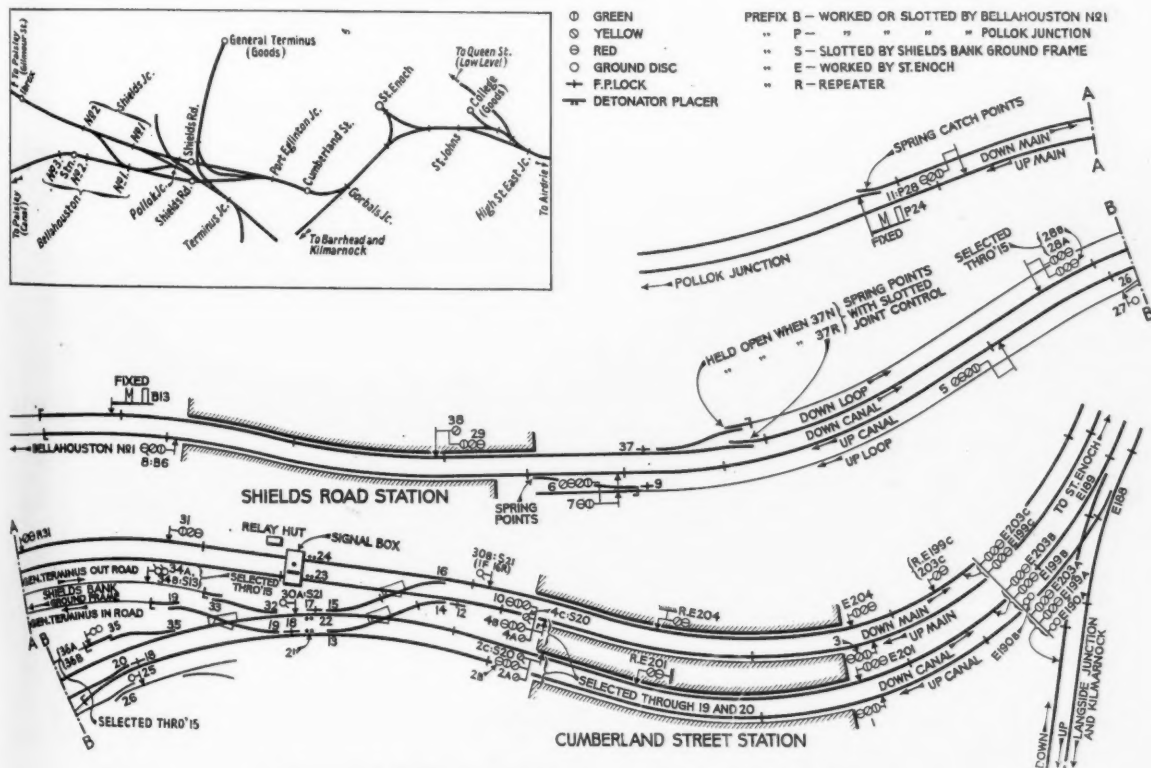


Diagram of the signalling and track layout at Port Eglinton

Canal; Down Loop to Down Canal; Up Canal to Up Loop. With the introduction of the new signalling arrangement there is a saving of over 600 yd. of permanent way at the junction.

The signal work involved the removal of all lock-and-block instruments, treadles and associated locking, and the substitution of track circuits with colour-light signalling. The existing mechanical interlocking lever frame was retained with additional electrical and mechanical locking to replace the Sykes lock-and-block signalling apparatus, which has been taken out entirely.

Three-position block working has replaced the former Glasgow & South Western and Caledonian types previously in use. The semaphore signals, operated by old pattern Sykes electric motors, have been replaced by three- and four-aspect colour-light signals. Continuous track circuiting and full electrical detection are also installed. An interesting feature of the electrical interlocking apparatus is the use, for the first time in Scotland, of the Westinghouse Brake & Signal Co. Ltd. plug-in type relay.

The scheme was brought into use without interruption to traffic. The whole of the work has been carried out by the staff of the Scottish Region.

PASSENGERS RESCUED FROM SNOWBOUND TRAIN.—By January 16 the evacuation of the 222 passengers from the snowbound "City of San Francisco" express of the Southern Pacific Railroad had been completed. As recorded in our January 18 issue, the train ran into snowdrifts on January 13, when crossing the Donner Pass in California. Food and medical supplies had been lowered by helicopter. Passengers made their way to a road about half-a-mile away, where cars took them to a relief train. On January 18 it was reported that only slight progress had been made in clearing the line.

RECORD NUMBER OF OUT-OF-GAUGE LOADS.—Railway coaches and locomotives for Argentina, Brazil, Egypt, and New South Wales were among the 8,217 out-of-gauge loads carried by the London Midland Region of British Railways last year. The longest haul involved the movement of nine massive steel plates over the 300 miles from Motherwell to Woolwich, while the largest load, which measured 129 ft. and weighed 93 tons, was a depropaniser column which travelled 114 miles. These loads constitute a record in the L.M.R.

AMERICAN TRAVEL AGENTS REPORT ON BRITAIN.—A group of travel agents came to Britain from the U.S., recently to study our tourist services. Before they left the British Travel & Holidays Association gave every member of the party a questionnaire on which they were invited to state their findings. Regarding internal transport services, they agreed that rail travel was the most popular with their clients, but that motorcoach services came a close second, while there was a big demand for hire cars. The consensus of opinion on hotel and restaurant services was that both were much better than the agents had been led to expect. Any critical comment centred on lack of central heating and private bathrooms in many hotels.



View from Port Eglinton signalbox looking towards St. Enoch, just before the new track layout was completed



The new electro-mechanical frame at Port Eglinton, showing the train describers, block instruments, signal repeaters, and point indicators



Interior of the relay hut, which is situated apart from the signalbox, with a relay rack swung away from the wall

British Railways Standard Class "6" Locomotive

Designed for the operating of both passenger and fast freight trains

THE first British Railways standard Class "6" 4-6-2 mixed-traffic locomotive has recently been turned out at Crewe Works and is numbered 72000. It has been designed and built under the direction of Mr. R. A. Riddles, Member for Mechanical & Electrical Engineering, Railway Executive. The parent design office is Derby, but as in the case of other British Railways standard locomotives, all the Regional drawing offices have contributed sections of the design.

Locomotive Design

No. 72000 has two cylinders, 19½ in. dia. × 28 in. stroke, coupled wheels 6 ft. 2 in. dia. and 225 lb. per sq. in. boiler pressure, giving a starting tractive effort of 27,520 lb. This makes the design suitable for passenger and fast freight working of the type now handled by L.M.R. Class "6" engines and the harder regional Class "5" turns.

The leading dimensions of the locomotives are as follow:—

Cylinders, dia. and stroke ...	19½ in. × 28 in.
Wheels, coupled dia. ...	6 ft. 2 in.
" front truck, dia. ...	3 ft.
" trailing wheel, dia. ...	3 ft. 3½ in.
" tender wheel, dia. ...	3 ft. 3½ in.
Wheelbase, coupled ...	14 ft.
" engine ...	35 ft. 9 in.
" engine and tender ...	58 ft. 3 in.
Heating surface—	
Tubes ...	1,876 sq. ft.
Firebox ...	195 sq. ft.
Total evaporative ...	2,073 sq. ft.
Superheater ...	628 sq. ft.
Total ...	2,701 sq. ft.
Graze area ...	36 sq. ft.
Boiler pressure ...	225 lb. per sq. in.
Weight of engine in working order ...	88 tons 10 cwt.
" tender in working order ...	47 tons 4 cwt.
Total ...	135 tons 14 cwt.
Tractive effort ...	27,520 lb.

The chassis is identical with the larger "Britannia" Class, except for minor details, but the boiler is smaller, which has enabled the maximum axle load to be kept down to 19 tons, giving the engine a route availability at least as good as the various regional Class "5" 4-6-0 engines.

Ten of these engines are being built in the 1951 locomotive renewal programme, numbered 72000-72009, and all will be allocated to the Scottish Region. They will be named after Scottish Clans.

Boiler and Firebox

The boiler is of normal design, with riveted joints, working at 225 lb. per sq. in. The shell is of high-tensile carbon manganese steel, and the barrel consists of two rings, the second being tapered and forming a true cone. The two rings are rolled from ½ in. thick and ⅞ in. thick plate, respectively, the outside diameters being 5 ft. 4 in. at the front and 6 ft. 1 in. at the firebox end. The smokebox tubeplate is of the drum-head type, ½ in. thick, and there are 35 large flue tubes 5½ in. dia. outside, 7 s.w.g. thick, and 108 small tubes 2½ in. dia. outside and 11 s.w.g. thick. The length between tubeplates is 17 ft.

A Belpaire firebox with a wide grate



British Railways standard Class "6" locomotive for passenger and fast freight trains

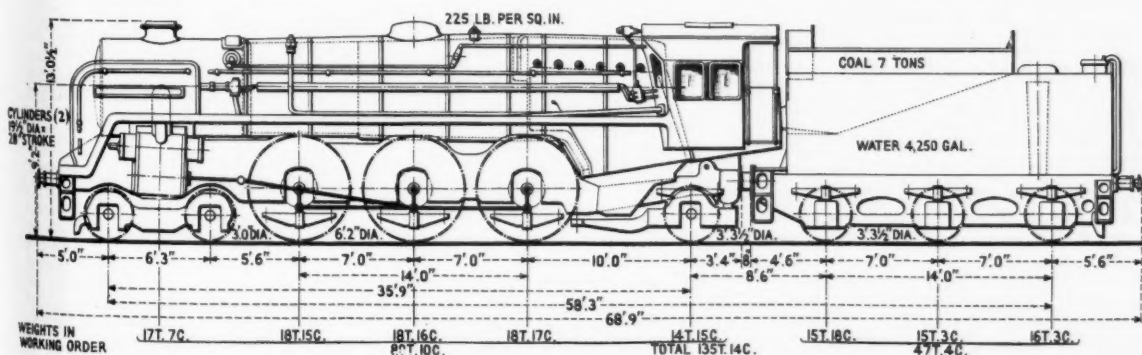
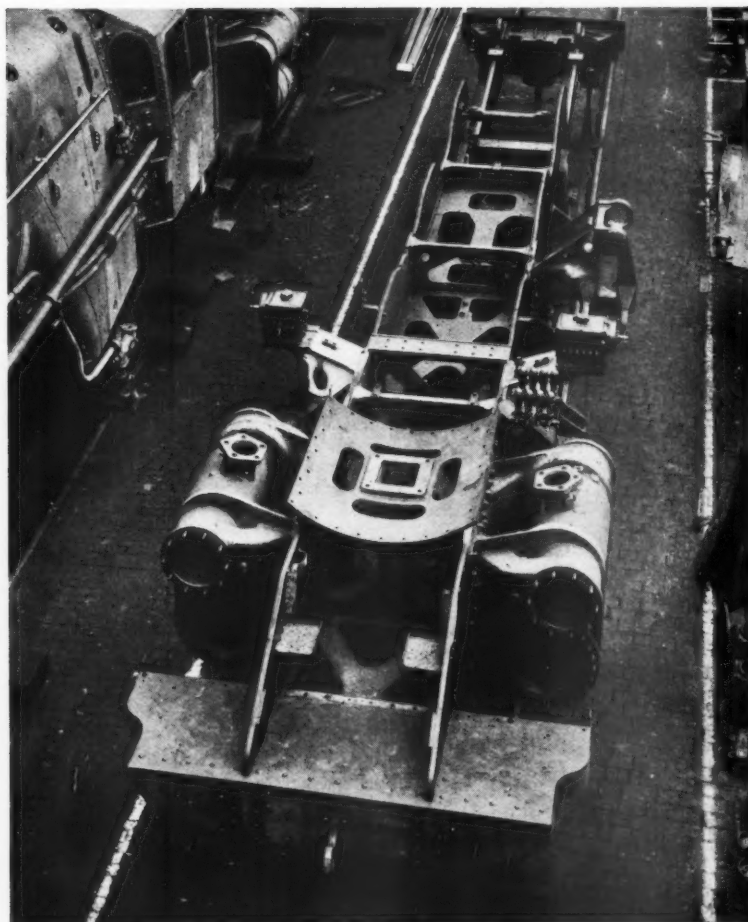


Diagram of principal weights and dimensions of Class "6" locomotive



Frame assembly, showing the method of staying

is fitted. The steel wrapper plate is $\frac{1}{2}$ in. thick, and the inner firebox is of copper, with a $\frac{3}{8}$ in. thick wrapper plate. The front of the locomotive firebox is extended into the boiler barrel to form a combustion chamber having 1 in. thick tubeplate.

All firebox waterspace stays are of Monel metal and fitted with steel nuts inside the firebox. The roof, longitudinal, and transverse stays are of steel, the former being riveted over outside the steel wrapper.

The firebox is 6 ft. 9 in. long outside, the width tapering from 7 ft. at the front to 6 ft. 8 in. at the back, to give a grate area of 36 sq. ft. The steam dome contains a Melesco centrifugal drier. The regulator is of the Superheater Co. Ltd. multi-valve type and is incorporated in the superheater header fitted in the smokebox. Access to the regulator valves is by a detachable cover in the top of the smokebox.

Boiler Feed

The boiler is fed with water through two separate clack valves, placed on the front barrel, delivering on to two inclined trays which deflect the incoming water round the inside of the barrel

clear of the tubes. A steam manifold is fitted on the top of the firebox in front of the cab, and is provided with separate shut-off cocks to each steam supply pipe, as well as a main shut-off valve, this being operated from inside the cab. Two direct loaded safety valves are mounted on the hind barrel immediately behind the dome. The boiler and firebox are lagged with a lightweight Fibreglass mattress.

Design Features

A rocking grate is provided, consisting of ten rocking sections, five each side of the centre line, each rocking section carrying 12 renewable firebar units. The rocking and operating arrangements are similar to the Class "7" locomotives, as is also the ashpan and operating gear.

The smokebox is of the cylindrical type resting on a fabricated saddle. The blast pipe has a plain circular cap of $5\frac{1}{2}$ in. nozzle dia., which incorporates the blower ring. The smokebox is self-cleaning, the arrangement being similar to the other standard locomotives, the Tri-Tone whistle and method of operating is also standard. A stuffing-box on the left-hand side allows the regulator

shaft to pass through the smokebox plate.

The design of the engine frame, including the thickness of the frames, method of staying the axlebox guides, fabricated dragbox, boiler securing, and springing arrangements are similar to the Class "7" engine; British Timken roller bearing axleboxes fitted to the engine and tender are also of similar design.

Other than the dimensions of the cylinders, which are 19 $\frac{1}{2}$ in. dia. \times 28 in. stroke, the whole of the link motion, slidebars, crossheads, valve and cylinder lubrication, and so on, are similar in design to the Class "7" locomotives.

The bogie is interchangeable with the Class "7" engines, as is also the pony truck and method of side control. The cab and fittings are to British Railways standard design in which all drivers' controls are grouped to provide easy access to the driver. The British Railways standard tender is fitted to the locomotive and is similar to the Class "7" engine.

Principal Contractors

The following are the principal suppliers of equipment for the locomotives:—

Exhaust steam injector, No. 11 Class K	Davies & Metcalfe Limited
Vacuum brake ejector; driver's brake valve; graduable steam brake valve and associated details	Gresham & Craven Limited
Roller bearing axleboxes	British Timken Limited
Self-aligning ball bearings for valve gear return cranks	Skefko Ball Bearing Co. Ltd.
Buffers	Geo. Turton, Platts & Co. Ltd.
Fibreglass insulating mattresses for boiler and firebox	W. Gilmour Smith & Co. Ltd.
Manually operated blowdown valve	Everlasting Valve Co. Ltd.
Mechanical lubricators for cylinder lubrication, and atomisers with check valves	Gulf Oil Co. (Great Britain) Ltd.
Superheater regulator and steam drier	Superheater Co. Ltd.
Tri-Tone chime whistle	Crosby Valve & Engineering Co. Ltd.

WASTING ASSETS.—The Road Haulage Association has asked the Chancellor of the Exchequer to revise the method of calculating wear and tear on wasting assets. It is suggested that the allowance should be increased when assets are replaced to provide relief based on the replacement value as against the present method of restricting the total allowance to the original cost of the asset. In its letter the Association states that the steep rise in the replacement value of assets due to inflated costs has made it increasingly difficult for members to replace their wasting assets, especially as regards vehicles, out of reserves set aside from profits. A fundamental contributory to the difficulties is that they have had to face in common with other industries a high rate of taxation. As the concessions granted by way of wear and tear allowances have been based on the original cost of the wasting assets concerned these have not been adequate. As a result members are placed in a critical financial position and must either seek additional capital or defer replacement of their vehicles for a longer period than is economical.

RAILWAY NEWS SECTION

PERSONAL

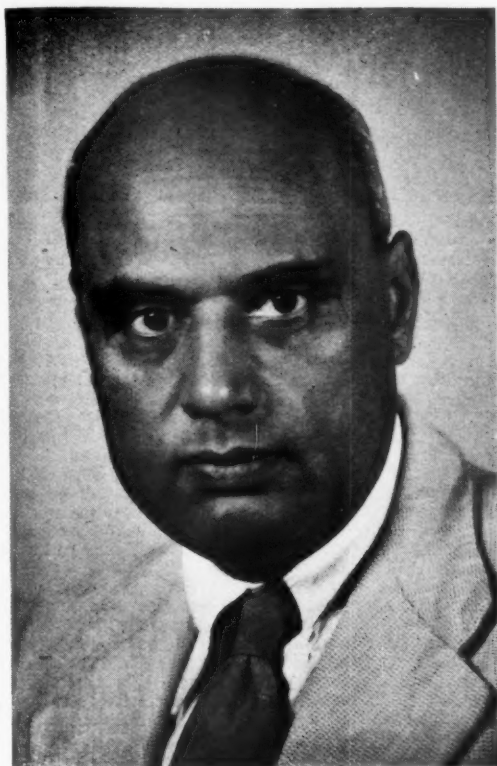
The Western Region has announced that Mr. J. J. Finlayson, formerly Locomotive Works Manager, Gorton, has been appointed Locomotive Works Manager, Swindon.

Mr. K. B. Mathur, M.Sc., Chief Operating Superintendent, East Indian Railway, who, as recorded in our January

Allahabad. In January, 1948, he became Chief Operating Superintendent, E.I.R., but left that post in March, 1951, to become the General Manager in the absence of Mr. B. B. Varma. Mr. Mathur resumed as Chief Operating Superintendent in November, 1951, on Mr. Varma's return from leave. Mr. Mathur was a delegate to the International Railway Congress, which was held at Lucerne, Switzerland, during June, 1947.

Mr. Donald M. Kerr, Acting General Manager of the Central Vermont Railway, Canada, has been confirmed in that position. He will also be a member of the board of directors and a member of the board's executive committee.

Mr. C. S. McLeod, M.Inst.T., Assistant Regional Staff Officer, Eastern Region, who, as recorded in our January 11 issue, has been appointed Regional Staff Officer,



Mr. K. B. Mathur
Appointed General Manager, Bengal
Nagpur Railway



Mr. C. S. McLeod
Appointed Regional Staff Officer,
Eastern Region

18 issue, has been appointed General Manager, Bengal Nagpur Railway, was born in 1904, and educated at Kanpur and Muir Central College, Allahabad. He graduated as M.Sc. and worked as a Professor of Physics at Ewing Christian College, Allahabad, for two years, before joining the East Indian Railway in 1928, as Probationary Assistant Transportation Superintendent. Following further experience, he served as a Senior Scale Officer in various capacities in the Commercial and Transportation Departments until 1942, when his services were placed at the disposal of the Defence Department. On release from the Defence Department, he returned to the E.I.R. as Superintendent, Transportation, Howrah, and after a brief period as Superintendent, Transportation, Asansol, was promoted in 1946 as Divisional Superintendent (Transportation), Dhanbad. In 1947 he went to headquarters as Deputy Chief Commercial Manager (Goods) and later that year took over as Divisional Superintendent,

Mr. S. J. Middleton, Assistant, Office of Chief Officer (Administration), Railway Executive headquarters, has been appointed Senior Assistant (Traffic), Office of Chief Regional Officer, Eastern Region, in succession to Mr. James Hilton, who has retired.

Mr. John R. Ratcliff, hitherto Engineering Works Manager of K. & L. Steel-founders & Engineers Limited, of Letchworth, has been elected to the board of that company as Engineering Works Director.

Mr. F. J. Gemmell Smith, Public Relations Officer in Europe for Canadian National Railways, is retiring on January 27 and will be succeeded by Mr. Eric F. Humphries, who will retain his present title of Public Relations Representative. Mr. Gemmell Smith was honoured at a farewell reception recently, when he was handed a cheque as a mark of the affection and high esteem of his colleagues in the European offices.

was educated in Aberdeen and at Emmanuel College, Cambridge, where he was a Wrangler in the Mathematical Tripos. He joined the L.N.E.R. in 1927 as a traffic apprentice and from 1932 to 1935 occupied posts in the staff and road motor sections of the Chief General Manager's Office. Then followed ten years in the Commercial Department in the Scottish Area, during which he was successively Chief Assistant to the District Goods & Passenger Manager, Dundee, Assistant to the Goods Manager, Assistant Goods Manager and Acting Goods Manager, with a short absence in 1938, when he was engaged on special duties in connection with the reorganisation of the L.N.E.R. stores work and the formation of the L.N.E.R. superannuation fund. Mr. McLeod moved to Edinburgh in 1945 as Assistant Divisional General Manager, Scottish Area, and returned to London in 1947 as Principal Assistant (Staff) to the Chief General Manager. He was appointed Assistant Regional Staff Officer, Eastern Region, at nationalisation.

**Mr. P. J. Martin**

Appointed Mechanical Engineer, Jamaica Government Railway

**Mr. Robert Flack**

Chief Accountant, General Mitre Railway, Argentina, who has retired

**Mr. A. W. Tait**

Appointed Director of Costings, British Transport Commission

Mr. P. J. Martin, A.M.I.Loc.E., formerly Sales Manager, Brush Bagnall Traction Limited, who, as recorded in our December 28 issue, is taking up the position of Mechanical Engineer, Jamaica Government Railway, on February 1, received his training on the Southern Railway at Eastleigh. From 1939 to 1948 he was with the Transportation Branch of the Royal Engineers and served in France, the Middle East, and Greece, both in charge of railway workshops and in staff appointments. He was mentioned in despatches and attained the rank of Major. In 1945 he was the Railway Mechanical Engineer of the Anglo-American Transportation Mission to Greece and was later seconded to the Foreign Office as the Railway Member of the British Economic Mission to Greece. On leaving the service he joined the Brush Electrical Engineering Co. Ltd. and was, until recently, Technical

Sales Manager of its subsidiary, Brush Bagnall Traction Limited. Whilst with that firm he travelled extensively and visited many railways in connection with the development of diesel traction.

Mr. Robert Flack, LL.M., M.Inst.T., who, as recorded in our January 18 issue, has retired as Chief Accountant of the General Mitre Railway, Argentina, was born in Belfast and educated at the Royal Academical Institution in that city. He graduated at London University with the degree of LL.M. and became a Barrister-at-Law of the English Bar, having been called by the Inner Temple. He began his railway career with the Midland Railway (Northern Counties Committee) and saw active service in France with the railway troops during the first world war. After the war Mr. Flack was attached to the staff of Accounts Investigators of the Irish Rail-

ways Executive Committee and later joined the Finance Department of the Ministry of Transport in London. In 1924 he joined the staff of Messrs. Deloitte, Plender, Griffiths & Company. He was appointed Assistant Accountant of the Central Argentine Railway in May, 1931, and later became Chief Accountant. In 1947 Mr. Flack became Deputy General Manager & Legal Representative and on the transfer to the Argentine Government of the British-owned railways, he remained as Chief Accountant, General Mitre Railway.

Mr. A. W. Tait, who as recorded in our January 4 issue, has been appointed Director of Costings, British Transport Commission, with responsibility for the general direction of the Traffic Costing Service, joined the Great Western Railway in 1926 in the Chief Accountant's Office. He was selected for special training and also

**Lt-Colonel W. Seton Anderson**

Appointed Principal, Railway Executive Staff Training Schools, Darlington



[Elliott]

Mr. H. T. Bird

Appointed District Engineer, Doncaster, Eastern Region

[& Fry]

**The late Mr. H. H. Andrews**

Who retired as Adviser to Traction Department, the English Electric Co. Ltd., in 1949

served on the personal staff of two Chief Accountants, Sir Ralph Cope and Mr. C. R. Dashwood. When the latter was appointed Chairman of the R.E.C. and Railway Accountants' Committees in January, 1940, Mr. Tait became Assistant Secretary of these bodies. In 1945 he was appointed Assistant to the Chief Accountant, G.W.R., his special duties in that post including rates and charges, and work connected with the company's road and air transport interests. On nationalisation he became Chairman of the Accountants' General Expenditure Sub-Committee, which position, together with that of Assistant to the Chief Accountant, Western Region, he vacated in 1950 to become Principal Costs Officer, British Transport Commission. Mr. Tait was seconded to assist Sir James Milne in the inquiry the latter undertook during 1948 into transport in Ireland. Mr. Tait is a Member of the Association of Certified & Corporate Accountants and the Institute of Transport, and a director of several bus companies in the B.E.T. Group.

Lt.-Colonel W. Seton Anderson, Railway Executive Staff Training School, Derby, who, as recorded in our January 11 issue, has been appointed Principal, Railway Executive Staff Training Schools, Darlington, entered the Royal Military Academy, Woolwich, in February, 1916, after a classical education at Westminster School. He was commissioned into the Corps of Royal Engineers in August, 1916, and served with the 4th Guards Division in Flanders and Germany, retiring in February, 1920. After several years' educational work in Canada and the U.S.A., he returned to this country, and later travelled extensively while pursuing the study of art and architecture. In February, 1940, on recall to the Army, he joined No. 2 Railway Training Centre, with the rank of Lieutenant, and was promoted to Major four months later. Following the disbandment of the Railway Training Centre, after six months at the War Office and a period at the Combined Training Centre, Inverary, he was appointed Commandant, No. 143 O.C.T.U. for Transportation Services, R.E., and promoted to Lt.-Colonel. After this unit was disbanded, Lt.-Colonel Seton Anderson commanded No. 6 Training Battalion, R.E. He left the Army in July, 1947, and was then engaged by the former L.M.S.R. to write a series of text books on railway subjects. For this undertaking he was attached to the School of Transport, Derby.

Mr. H. T. Bird, B.A., B.A.I., A.M.I.C.E., District Engineer, Peterborough, who, as recorded in our November 16 issue, has been appointed District Engineer, Doncaster, is a graduate in Arts and Engineering of Trinity College, Dublin; he resumed his studies after serving in France in the Royal Artillery during the war of 1914-18. Mr. Bird began his railway career in the Bridge Office of the L.N.E.R. at Liverpool Street, and after a short time entered the New Works Office of the Metropolitan Railway, where he was engaged on work in connection with the opening up of the widened lines at Kings Cross. In 1924 he returned to the L.N.E.R. and was appointed to the New Works Office at Edinburgh; he left there to assume duties in the Construction Office at Kings Cross. While at Kings Cross Mr. Bird was engaged for a short time in the office, but chiefly as Resident Engineer on new works, among which were the up marshalling yard at Whitmoor, the Lea Bridge widening, the new bridge for the

North Circular Road at New Southgate and the Gidea Park to Shenfield widening. In 1934 he was appointed Chief Assistant to the District Engineer at Leeds, and in March, 1938, became Assistant District Engineer, Kings Cross, which position he vacated on being made District Engineer, Boston, in the next November. He was appointed District Engineer, Peterborough, in 1947. As second in command of the L.N.E.R. Construction Company, R.E. (S.R.), in 1939, Mr. Bird was mobilised at the outbreak of war and went to France in the same month. In January, 1940, he was given command of the newly formed 157 Railway Construction Company, R.E.; and he returned to England with his company on the evacuation from France. He was promoted Lt.-Colonel in January, 1942, and was successively Railway Construction Engineer, Northern Command, and Scottish Command, until specially released to return to his railway duties in October, 1943.

We regret to record the death on January 17 of Mr. H. H. Andrews, who retired on December 31, 1949, as Adviser to the Traction Department of the English Electric Co. Ltd. He was born in 1884, and was educated at University College School and University College, London. In 1902 he became a pupil at the Hampstead Corporation Power Station, and in 1903 he joined the outside erection staff of the then British Westinghouse Electric & Manufacturing Co. Ltd. From 1912-13 he was engaged in traction survey work for a private mining enterprise in Turkey, and in 1914 he joined the Army, serving throughout the war. At the time of his demobilisation, in 1919, he was a Captain in the 2/5 Lancashire Fusiliers. In that year he joined the English Electric Co. Ltd., and from 1926 to 1936 was Manager of Traction Tendering & Contracts for that company, first at Preston and then at Bradford. From 1936 to 1943 Mr. Andrews was Assistant Manager, Traction Department, London, and in the latter year he was made Manager of Traction Sales & Contracts. Mr. Andrews was appointed Adviser to the Traction Department early in 1949.

Mr. H. Aidley, whose post has been redesignated Executive Officer (Wages Staff), Railway Executive, began his railway career with the L.N.W.R. After obtaining experience in station, depot and district office commercial and operating work, he was transferred to the Staff Department, in which he has spent many years, including several years as Wages Assistant to the Chief Officer for Labour & Establishment, L.M.S.R. He was Secretary of the Railways Staff Conference from 1937 to 1947, in which post he dealt with all sections of staff and took part in all the negotiations between the railway companies and trade unions, also arbitration proceedings, during that period. In the New Year Honours List for 1947 he was awarded the M.B.E. Mr. Aidley first took up duty with the Railway Executive in 1950, where he was subsequently appointed as Executive Officer (Operating Staff) and now assumes additional responsibilities on his post being redesignated Executive Officer (Wages Staff).

Mr. F. A. Hill, who, as recorded in our December 7 issue, has retired as Principal Assistant to the General Manager, Rhodesia Railways, joined the system as Personal Clerk to the General Manager in October, 1920. From 1924 to 1930 he was in the trains & general section, and in 1931 trans-

ferred to the new Accounts Branch, which was created following the establishment of the Railway Commission. Mr. Hill subsequently became Accounts Assistant to the General Manager, and held this appointment until taking up the position of Personal Assistant. He became Principal Assistant to the General Manager in 1946. Mr. Hill was also Secretary to the Rhodesian & Nyasaland Airways Limited and was Secretary to the Victoria Falls Hotel Limited, from 1946 until his retirement.

Mr. T. A. Wright has been elected a Director of Firth Brown Tools Limited.

Mr. Benjamin Leslie Bell, Assistant District Engineer, Barrow-in-Furness, London Midland Region, has been appointed Assistant District Engineer, Newcastle-on-Tyne, North Eastern Region.

We regret to record the death on January 19, at the age of 73, of Major-General Guy Dawnay, C.B., C.M.G., D.S.O., M.V.O., until recently Chairman, Gordon Hotels Limited.

The Metropolitan-Vickers Electrical Export Co. Ltd. has announced that Mr. J. A. MacLean has been appointed as Representative in Canada and Mr. W. Bailey as Manager in Portugal.

We regret to record the death on January 17, at the age of 67, of Mr. J. F. Stewart, lately Managing Director of the International General Electric Co. of New York Ltd.

The following notification appeared recently in *The London Gazette* under the heading of Regular Army—Commands & Staff:—

Major-General G. N. Tuck, C.B., O.B.E., late R.E., is appointed Engineer-in-Chief, War Office, January 15, 1952.

Mr. K. R. Green has been appointed Sales Manager, Scientific & Industrial Products, Sunvic Controls Limited. He joined Sunvic Controls Limited early in 1951 as an Application Engineer.

Mr. H. J. N. Riddle, Assistant Engineer, Siemens and General Electric Railway Signal Co. Ltd., has been appointed Design & Development Engineer, and Mr. J. Sulston, Deputy Signal Engineer, has been appointed Signal Engineer.

Mr. G. W. Johnson has been appointed Manager of the British Thomson-Houston Co. Ltd., Liverpool District Office, following a decision that this office should have a full-time Manager resident in the district. Mr. Johnson has served under Mr. A. B. Race's Management in the Manchester/Liverpool area since 1945. Mr. A. B. Race will continue as Manager of the Manchester District Office.

The British Transport Commission has announced that Mr. Matthew Wallace, the Solicitor to the Commission in Scotland, will retire from its service on March 28. The Commission has offered Mr. Alan Cameron Miller, Advocate, at present Sheriff-substitute of Inverness, Moray, Nairn and Ross and Cromarty at Fort William, the post of Legal Adviser to the Commission in Scotland, which Mr. Cameron Miller has accepted. Mr. Cameron Miller will be in charge of the Commission's Legal Service in Scotland and will take up his appointment on April 1.

British Transport Commission Statistics (Period No. 12)

Summary of the principal statistics for the four-week period ending December 2

STAFF

	B.T.C. Head Office	British Railways	London Transport	British Road Services (Road Haulage)	Road Passenger (Provincial & Scottish)	Hotels & Catering	Ships & Marine	Inland Waterways	Docks, Harbours, Wharves	Railway Clearing House	Commer- cial Adver- tisement	Legal	Films	Total
Number ...	277	599,418	99,394	80,552	59,440	16,521	6,104	4,935	19,888	638	199	309	40	887,715
Inc. or dec.	—	+1,276	+213	—152	—62	—343	—31	+30	—42	—3	—4	+7	—	+889

BRITISH TRANSPORT COMMISSION TRAFFIC RECEIPTS

	Four weeks (Period No. 12)		Aggregate for 48 weeks	
	1951	1950	1951	1950
	£000	£000	£000	£000
British Railways—				
Passengers	6,201	6,033	98,811	98,478
Parcels, etc., by passenger train	2,595	2,501	30,439	28,248
Merchandise	8,346	7,580	90,306	80,174
Minerals	3,246	2,804	33,635	30,010
Coal & coke	7,696	6,770	84,079	71,699
Livestock	181	226	1,406	1,739
	28,265	25,914	338,676	310,348
British Railways—				
C. & D. and other road services	825	791	9,725	8,865
Ships and Vessels	608	562	11,163	10,172
London Transport—				
Railways	1,234	1,220	14,821	13,454
Buses & coaches	2,603	2,333	31,133	28,507
Trams & trolleybuses	714	799	8,924	9,754
	4,551	4,352	54,878	51,715
British Road Services—				
Freight charges, etc.	6,547	5,499	71,693	57,684
Road Passenger Transport	2,967	2,557	40,190	35,509
Docks, Harbours & Wharves	1,185	912	12,934	10,879
Inland Waterways	146	127	1,665	1,474
Hotels & Catering	1,153	1,052	14,826	13,399

LONDON TRANSPORT

	Passenger journeys	Inc. or dec. per cent. over 1950	Car miles	Inc. or dec. per cent. over 1950
	000		000	
Railways... ..	48,125	— 1.3	17,263	— 2.6
Buses & coaches	228,413	+11.3	26,138	+ 7.0
Trams & trolleybuses	70,948	— 10.8	6,981	— 13.9
Total	347,486	+ 4.2	50,382	+ 0.2

INLAND WATERWAYS Tonnage of traffic and ton miles

	Tonnage	Inc. or dec. per cent. over 1950	Ton miles	Inc. or dec. per cent. over 1950
Coal, coke, patent fuel & peat	000		000	
Liquids in bulk	475	+ 9.2	6,940	+ 16.4
General merchandise	175	+ 6.1	4,419	+ 9.9
	334	+ 1.3	5,268	— 4.5
Total	984	+ 5.8	16,627	+ 7.3

BRITISH RAILWAYS Rolling Stock Position

	Operating stock	Number under repair	Available operating stock	Serviceable stock in 1950
Locomotives	19,255	3,236	15,575	15,623
Coaching vehicles	57,832	5,222	52,610	52,722
Freight wagons	1,109,157	75,579	1,033,578	1,021,023

BRITISH RAILWAYS

Passenger Journeys (Month of October, 1950)

Full fares	Monthly returns	Excursions, cheap day, etc.	Other descriptions	Workmen	Season tickets	Total	Inc. or dec. per cent. over 1950
6,006,000	8,992,000	19,812,000	3,855,000	19,685,000	24,363,000	82,713,000	+1.8

BRITISH RAILWAYS

Freight Tonnage Originating and Estimated Ton-Miles (Period No. 12)

	Minerals	Merchandise	Coal & coke	Livestock	Total	Inc. or dec. per cent. over 1950
Tons originating	000	000	000	000	000	
Ton-miles	5,095	4,316	13,841	103	23,355	+0.8
	434,471	584,955*	875,533	—	1,894,959	+3.6

* Includes livestock

BRITISH RAILWAYS (Period No. 12)

	Total steam coaching train-miles	Total electric coaching train-miles	Total freight train-miles	Freight train- miles per train engine-hour	Net ton-miles per total engine-hour	Locomotive coal consumption	
						Total tons	Lb. per engine-mile
1951	13,404,000	3,744,000	11,544,000	8.2	609	1,059,000	63.4
1950	14,147,000	3,735,000	11,396,000	8.0	581	1,089,000	64.0

Proposed Amended Rail and Bus Fares

Conclusions of Transport Tribunal after consideration of Passenger Charges Scheme, 1951

The Transport Tribunal announced on January 18 its conclusions on the Passenger Charges Scheme, 1951. The Tribunal, under the chairmanship of Mr. Hubert Hull, the President, began its hearing of the British Transport Commission proposals for alterations in British Railways and London Transport railway, bus, and motorcoach fares on October 8, 1951; the inquiry was concluded on December 3, after considering the views of 99 local authorities and other bodies. Accounts of the proceedings were given in *The Railway Gazette* issues from October 12 to December 7, inclusive. The Passenger Charges Scheme was described and commented on in our issue of April 20, 1951.

Lower Ordinary Railway Fares

The Tribunal conclusions include the following:—

British Railways (other than London Tilbury & Southend Line), Ordinary Fares: Third class single fares to be calculated at a rate not exceeding 1½d. a mile in the case of a ticket issued before January 1, 1953, and 2d. a mile for a ticket issued on or after that date.

Second class single fares to be 25 per cent. greater than the current third class single fares, and the first class single fares to be 50 per cent. greater than third class fares; and return fares to be double the current single fares.

British Railways and London Transport Railways, Season Tickets: Charges for distances not exceeding 75 miles for a period of one week not to exceed charges calculated in accordance with scales ranging from 4s. 6d. for one mile to 12s. for 10 miles up to £2 16s. 3d. for 75 miles.

London Transport Railways and L.T.S. Line, Ordinary Fares: Third class single fares not to exceed fares calculated on a schedule showing a mileage scale from 2d. a mile to 10s. for 80 miles. First class single fares on the L.T.S. line to be 50 per cent. greater than the current third class single fares. Return fares to be double the current single fares.

London Transport Buses

London Transport Road Services (other than Green Line and inter-station bus services): Ordinary single fares, other than early morning fares, not to exceed fares calculated on a scale starting at 2d. a mile and ranging to 6s. 3d. for 50 miles. This scale shows two miles, 3d.; three miles, 5d.; four miles, 6d.; five miles, 8d.; six miles, 9d.; seven miles, 11d.; eight miles, 1s.; nine miles, 1s. 2d.; 10 miles, 1s. 3d. Early morning single fares for journeys not exceeding 10 miles begun after 3 a.m. and due to finish not later than 8 a.m. shall not exceed fares calculated on a scale rising from 2d. for a mile to 3d. for two miles up to 10 miles, inclusive.

Effect of Tribunal Proposals

Examples of the proposed rates for early morning third class return fares on both British Railways and London Transport railways are: One mile, 4d.; five miles, 11d.; 10 miles, 1s. 6d.; 20 miles, 2s. 7d.; and 60 miles, 4s. 5d.

The proposed new season ticket rates on British Railways and London Transport railways include: One mile (weekly), 4s. 6d., (monthly), 16s. 3d., (annual), £8 16s.; 10 miles (weekly), 12s., (monthly), £2 3s. 3d., (annual), £23 8s.; 50 miles

(weekly), £1 17s. 6d., (monthly), £6 3s. 3d., (annual), £66 12s. Charges for first class season tickets would be 50 per cent. greater than for third class.

For distances over 100 miles, for third class season tickets on British Railways and London Transport railways during a calendar month period, there would be added to the current charge a sum calculated at 1s. 3d. a mile for each mile over 100 and up to 175 miles; at 9d. a mile for each mile over 175 miles and up to 250 miles, and at 6d. a mile for each mile over 250 miles.

Conclusions Subject to Confirmation

The Tribunal emphasises that its conclusions can have no legal effect until they have been embodied in a scheme and that scheme has been formally confirmed by the Tribunal. The draft Passenger Charges Scheme is being revised and will be confirmed as soon as possible.

The main provisions of the Passenger Charges Scheme, 1951, as originally submitted to the Tribunal, were:

(a) London Area:

(1) **London Transport (excluding coaches):** Ordinary single fares to be increased from 1½d. a mile to 1½d.; journeys of up to one mile to cost 2d. Early morning return fares by rail to be increased about 20 per cent. Early morning single fares by road to be increased. Season ticket rates to be increased about 20 per cent.

(2) **London Transport ("Green Line") Coaches:** Fares to be increased from 1½d. to 1½d. a mile. In certain circumstances, minimum fares may be charged.

(3) **British Railways London (excluding L.T.S.) Lines:** Ordinary single fares not to be changed. Day return fares to be increased from 1½d. to 1½d. a mile. Early morning return fares and season ticket rates to be increased about 20 per cent. Monthly return fares to be increased about 10 per cent.

(4) **L.T.S. Line:** Ordinary single fares to be increased from 1½d. to 1½d. a mile; journeys of up to one mile to cost 2d. Early morning return fares and season ticket rates to be increased about 20 per cent.

(b) British Railways Outside London Area:

Ordinary single fares to remain substantially at the present rate of 2½d. a mile. The present erratic scale to be made consistent including abolition of bonus mileage for Severn Tunnel and so on. Early morning return fares to be introduced generally at the rate for the London Area for journeys up to 20 miles; over 20 miles, these fares to operate only where workmen's fares were formerly granted. Season tickets to be at the rate proposed for the London Area generally will be less than 20 per cent., as rates at present are higher than in the London area.

Dock Development at Hull

Rebuilding of Riverside Quay and south side of Albert Dock

The Docks & Inland Waterways Executive announces that the British Transport Commission has authorised rebuilding of the Riverside Quay and the south side of the Albert Dock, Hull, at a cost of £1½ million. Riverside Quay and a large area along the south side of Albert Dock were entirely destroyed by enemy action in 1941, and apart from a brief period of utilisation by the War Office, it has since been out of use. Modern requirements call for much greater width than that of the former quay, and it has been possible to bring forward the face-line of the quay 50 ft. into the River Humber, and at the south side of Albert Dock, by encroaching 35 ft. beyond the existing dock wall; this gives an available width of 312-320 ft. Advantage has been taken of the opportunity for complete reconstruction to modernise the design, and close consideration has been given to use of the facilities in conjunction with representatives of the users.

The former Riverside Quay, built in 1907 by the N.E.R., was a wooden structure about 70 ft. wide. At the west end was a passenger station with waiting and baggage examination rooms, and at the east end a covered market where fruit and vegetables landed on the quay were sold. It was equipped with electric cranes and designed for handling traffic inward and outward by rail, but with the growth of road transport after the 1914-18 war, much congestion occurred on the roadway behind the quay.

The new Riverside Quay will be 1,235 ft. long, and splayed back to the existing solid ground at each end so as to provide rail access at the quay edge. It will be of open reinforced concrete construction capable of taking deck loads of 3 cwt. per sq. ft. inside the transit sheds, and 5 cwt. per sq. ft. on the open quay. Mobile cranes of six tons capacity will be able to work at any point. Two single-storey transit sheds will be provided sited so as to leave a 22-ft. wide quay between the coping and the face of the building. Besides the rail track, the quay will be provided with twelve electric semi-portal travelling cranes of 65 ft. maximum radius, ten of three tons and two of 6/3 tons capacity. The floor of the longer shed will be extended at the back to form a continuous 10-ft. wide platform, protected from the weather by a canopy outside the building, alongside which will be two railway tracks.

Passenger Accommodation

At the east end of Riverside Quay, passenger and Customs accommodation will be provided, and other buildings include offices, a canteen, and maintenance workshops.

On the south side of Albert Dock, the new quay to be built beyond the existing dock wall will be open, of reinforced concrete. This quay will carry two railway tracks throughout its length, and fourteen electric portal travelling cranes, eleven of three tons and three of 5/10 tons capacity.

E.C.E. Inland Transport Committee

Examination of international transport co-ordination: conventions on acceleration of Customs procedure in railway traffic

The Inland Transport Committee of the United Nations Economic Commission for Europe (E.C.E.) met in Geneva in special session on January 7-11. The extraordinary meetings were arranged at the last ordinary session, in July, 1951, to establish the general transport policy to be jointly adopted by European countries. Problems discussed included road, rail, and water traffic co-ordination, and the co-ordination of investment, comprising the financing, construction, and repair of main traffic arteries, railway modernisation, and the renewal of rolling stock.

On the problem of co-ordination, the I.T.C. examined interim reports submitted by technical groups, and had before it a report submitted jointly at its request by representatives of the various interests engaged on the transport industry or using its services, namely, the International Chamber of Commerce, the International Union of Railways, and the International Road Transport Union. The committee noted with satisfaction that these bodies had achieved agreement on various political and technical aspects of the co-ordination of transport, which will be of great assistance to Governments in arriving at decisions.

Minimising Frontier Delays

Two new international conventions were signed by Belgium, France, Italy, Luxembourg, the Netherlands, Norway, Sweden, and Switzerland, with the aim of minimising the delay caused in rail transit by Customs inspection of passenger and goods trains.

The first of these conventions provides that examination of passengers and baggage in international trains shall, so far as possible, be carried out while the train is in motion, while baggage in transit through a country shall be placed in sealed vans. When the journey is not long enough to allow for inspection to take place en route, the signatory countries agree to grant facilities to the Customs officers of both countries, wherever possible, for simultaneous examination at a single stopping point near the frontier.

Customs Procedure in Freight Traffic

The convention on goods traffic embodies the same principle. Wherever possible, frontier railway stations will be located where joint inspection of the goods can be carried out, and interior Customs offices will be established at major interior loading points which will allow goods to be inspected by the national administration and sealed in their vans until they reach an interior clearing station in the country of destination. This latter provision is of special importance for perishables. Signatory States will mutually respect the seals affixed to a load by neighbouring Customs authorities whenever such load is accompanied by an international Customs declaration, of which a model is incorporated in the convention.

This acceleration of Customs procedure originates in a proposal by the International Railway Union (U.I.C.), and will give rail transport the advantages of a simplified Customs procedure already enjoyed by road transport under the recently inaugurated system of Carnet T.I.R., referred to in our issue of September 14, 1951. As a result, it will be

possible to accelerate international railway passenger and freight services.

The special session was attended by delegates from Austria, Belgium, Denmark, France, Greece, Italy, Yugoslavia, Luxembourg, the Netherlands, Norway, Sweden, Switzerland, Turkey, the United Kingdom (representing also the Western occupation zones of Germany), the U.S.A. The International Transport Workers' Federation and the International Union of Railways were among the bodies represented.

Monsieur E. Dorges, of the French Ministry of Transport, was elected Chairman of the session, with Mr. W. de Vries, of the Netherlands Ministry of Transport, as Vice-Chairman.

In the introduction to a report on its activities since May, 1951, submitted to the Economic Commission for Europe, the I.T.C. records a general upward trend in the volume of road, rail, and inland water traffic in Europe. Statistical research having revealed a lack of information regarding goods transport by road, a sample survey is called for in several countries in 1952.

The above work is considered to be a prerequisite in the formulation of a general transport policy.

Opening of Saudi Arabian Railway

Completion of 350-mile line built by American-owned oil company

An account of the inception and early development of the railway being built in Saudi Arabia by the Arabian American Oil Company (Aramco) appeared in our April 20, 1951, issue. The track was completed throughout from Damman Pier, on the Persian Gulf, to Riyadh, the capital, on October 10 last, some six weeks ahead of schedule, but as some works remained to be completed the official opening was arranged by the company for January 1.

King Ibn Saud and his Government were anxious, however, for the line to be opened in the minimum possible time, and pointed out that the date chosen for it by Aramco had no significance in a Mohammedan land. Plans for a ceremonial opening were therefore put in hand immediately, and only ten days after the first trial train entered Riyadh the line was inaugurated.

On October 20 the King, with his sons and the Court, sat in an improvised grandstand to watch the Crown Prince drive the golden spike, which was held by J. H. Gildea, General Manager of the Railway. The first train entered Riyadh Station, hauled by a 1,000 h.p. diesel locomotive, bearing the flag of Saudi Arabia and carrying three Arab railway workers on a decorated platform built out in front of it. It consisted of passenger and freight vehicles, all heavily loaded.

Almost the entire population of Riyadh had crowded to the railway to watch the

ceremony and gain what was for many their first view of a train. They were rewarded with a sight of all types of diesel locomotives now in use hauling an assortment of rolling stock up and down the last mile of railway during most of the afternoon. The celebrations closed with festivities and dancing.

Cost of Construction

The total construction cost of the railway, which is just over 350 miles long, has been approximately \$50,000,000, including the seven-mile pier built out into deep water at Damman. Aramco has paid all costs, but is already recovering them from the Government, which set aside a portion of oil royalties to meet the expenses.

Aramco has gradually withdrawn from the financial and operational side of the undertaking, leaving them in the hands of the Saudi Arabian Government Railway organisation, which now employs Mr. Gildea and a small staff of highly-trained American personnel. Some Saudi Arabs were sent to American universities at Beirut and Aleppo for intensive courses to enable them to take up executive positions on the railway. As they did not begin their studies until October 6, it will probably be three years at least before they are ready to replace junior American officials.

Economic benefits already resulting from



The first train entering Riyadh, the capital of Saudi Arabia, hauled by 1,000-h.p. diesel-electric locomotive carrying the Saudi Arabian flag

the railway have been great, and will undoubtedly increase. Riyadh is isolated by miles of barren gravel plain and shifting sands from the agricultural areas of the northeast, and transport by slow camel caravan has been so expensive as to make food prices almost prohibitive. It is now an overcrowded city, because of the high cost of materials which had to be brought over great distances with considerable difficulty. Most of its population live in tents, although they are not nomadic, but the railway is already bringing in housing materials, and food prices have fallen to less than half what they were before the line was opened.

Few railway openings can have benefited the population of a country so rapidly. As there are no improved highways between Riyadh and the coast, the railway has no competitor in heavy haulage. Its 10-hr. night passenger expresses, using stainless-steel Budd self-propelled railcars, can compete favourably with existing air services. The success of the railway seems therefore assured, strengthening the case for the extension of the line to the Red Sea, thus completing a Trans-Arabian railway.

United Railways of the Havana

The report of the directors of the United Railways of the Havana & Regla Warehouses Ltd. for the period June 11, 1949, to June 30, 1950, states that the Cuban accounts supplied by the Interventor are unaudited and that, bearing in mind conditions in that country, attempts to have them audited in Cuba would be abortive. Because the accounts are so much out of date the directors emphasise that their value is largely academic.

The working of the railways, warehouses, and wharves for the period under review indicated by the unaudited figures, showed receipts of £4,673,587, and expenses £5,822,992, leaving a deficit of £1,149,405. After taking into consideration sundry debits and credits as shown in the net revenue account, and after charging debenture interest of £602,936, payments of which are deferred, and £520,886 exchange loss, there was a loss for the period of £2,219,709. The consolidated revenue account of the company shows a deficit totalling £18,816,531.

Mr. R. S. Mills, Chairman & General

Manager in London, calls attention in his statement issued with the report, which is referred to in an editorial note in this issue, to a new scheme for the financial reorganisation of the United Railways of the Havana and the Havana Terminal Railroad Company.

The general principles of the new scheme are:—(1) To substitute for the seven classes of debentures and three classes of share capital which now constitute the capital of the companies two classes of income debenture stock and one class of share capital.

(2) To do away with the necessity for repeated Schemes of Arrangement providing moratoria in respect of debenture interest and sinking fund payments.

Reports had appeared from time to time, states Mr. Mills, regarding approaches made to the company for the sale of the railway. In this connection the company had maintained the attitude that until potential purchasers were able to confirm that they have satisfied the Government that they are in a position to operate the railway, it would be fruitless to enter into negotiations.

British Railways Recruiting Publicity



POST a letter in London today, it will reach Glasgow by the morning — carried by rail and sorted on the way.

British Railways carry more than 7,500 million letters and 214 million postal parcels every year. And this is only a small part of their seven-day-a-week job keeping Britain's vital lifelines open. Your daily foodstuffs, your household needs, the raw materials and finished products of industry, the diverse needs of nearly a thousand million passengers a year ... all are being handled despite a severe staff shortage.

➔ British Railways need thousands more men and women for this important work. If you would like a worth-while job, apply to your local stationmaster, railway depot or nearest Employment Exchange, and

**Join the
Busiest Railway System
in the World** **BRITISH RAILWAYS**



FOOD! The daily milk, the meat ration, our fish, vegetables and packaged goods, generally have a rail journey to reach us. Among the 300 million tons of freight a year (far more than pre-war) carried by British Railways, food takes a prominent place.

Today, our railways are busier than ever carrying the nation's food, as well as the raw stuffs of industry and nearly a thousand million passengers a year — working round the clock to keep Britain's vital lifelines open. And this despite a severe staff shortage.

➔ British Railways need thousands more men and women for this important work. If you would like a worth-while job, apply to your local stationmaster, railway depot or nearest Employment Exchange, and

**Join the
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Examples of press advertising by the Railway Executive emphasising the essential importance of railway work

Contracts & Tenders

Societe Anglo-Franco-Belge, La Croyere, Belgium, of which the London agents are **C. M. Hill & Co. (Engineers) Ltd.,** has received a repeat order for five "NG15" class steam locomotives by the South African Railways.

The Canadian National Railways have recently placed orders for 49 diesel-electric locomotives at a cost of some \$8,000,000. Delivery of the new equipment is expected to be by the late Spring and will bring the number of diesel-electric locomotives in use on C.N.R. lines to 342 units. The contracts have been placed as follows:—

Canadian Locomotive Co. Ltd.: six 1,600 h.p. locomotives.

General Motors Diesel Limited: eight 1,500 h.p. locomotives and ten 1,200 h.p. shunters.

General Motors Corporation, U.S.A.: five 1,200 h.p. shunters for the Grand Trunk Western Railway.

Montreal Locomotive Works: ten 1,600 h.p. locomotives and ten 1,000 h.p. shunters.

According to a report by the Board of Trade Special Register Information Service the Egyptian State Railways have issued a call for tenders for the electrification of the railway between Cairo and Helwan. The contract is to be divided into four sections, and tenders will be accepted for the complete scheme, or for one, or more, of these sections. The division of the contract is as follows:—

Supply and erection of overhead equipment.

Supply and erection of one control room and four substations.

Supply and erection of electric trains.

Supply and erection of electric signals.

The latest date for the reception of tenders is 11.30 a.m. on April 5. Copies of the tender documents are available at a cost of £E.30 at the Office of the Egyptian Chief Inspecting Engineer, 41, Tothill Street, London, S.W.1.

Notes and News

Vacancies for Senior Draughtsmen.—A firm manufacturing steam, diesel and electric locomotives has vacancies for senior draughtsmen. See Official Notes on page 111.

English Electric Share Issue Result.—In connection with the offer of 1,179,577 new ordinary shares recently made to stockholders of the English Electric Co. Ltd., a total of over 1,800,000 shares was subscribed or applied for, and more than 95½ per cent. of the issue was taken up.

Institution of Locomotive Engineers.—At a meeting of the Institution of Locomotive Engineers to be held at the Institution of Mechanical Engineers, Storey's Gate, S.W.1, at 5.30 p.m. on February 6, there will be an informal discussion on "Passenger Comfort on Modern Coaching Stock."

Alsheath Limited.—British Insulated Callender's Cables Limited and the Loewy Engineering Co. Ltd. have formed a new company to apply their knowledge and patents in the field of aluminium sheathed cables. The name of the new company is Alsheath Limited, and its offices are at Norfolk House, Norfolk Street, London,

W.C.2. The experience of British Insulated Callender's Cables Limited as cable makers, and of the Loewy Engineering Co. Ltd. as builders of extrusion presses, will be incorporated in new plant for the cable making industry in the United Kingdom and for export.

Institution of Railway Signal Engineers.

Mr. H. F. Dennison will read a paper on "Modern Developments in Signalling and their Application on the Eastern Bengal Railway, Pakistan," at a meeting of the Institution of Railway Signal Engineers to be held at the Institution of Electrical Engineers, Savoy Place, W.C.2, at 6 p.m. on February 6.

Future of Helicopter Travel.

Mr. J. G. Braithwaite, Parliamentary Secretary to the Ministry of Transport, said recently that progressive local authorities should consider the scheduling of sites for suitable air stops to cater for helicopter travel. If the multi-engine passenger helicopter continued to make progress, he said, within ten years the whole of our internal air transport system would have been revolutionised.

Fell Diesel-Mechanical Locomotive in Service.

British Railways diesel-mechanical locomotive No. 10100 went into regular service in the London Midland Region on January 21. Its first run was on the 7.10 a.m. passenger train from Derby, due Manchester Central at 10.5 a.m., and in future it will maintain this, and the following passenger services, from Monday to Friday each week: 11.35 a.m. Manchester Central to Derby; 7.16 p.m. Derby to Manchester Central. No. 10100 is a 2,000-h.p. unit capable of a maximum speed of 78 m.p.h.

Flameproof Battery Locomotives for Coal Mines.

The Metropolitan-Vickers Electrical Co. Ltd. has in hand a number of orders for flameproof battery and other mining locomotives for the National Coal Board. Among the flameproof battery locomotives are twelve 13½-ton units, the first six of which were ordered in 1948, and seven sets of electrical equipment for 7-ton Atlas locomotives being built by Wm. Neill & Sons (St. Helens) Ltd., the first three of which were ordered in March, 1949. Early last year four 8-ton trolley locomotives and power supply

equipment were ordered, these being for the first installation of trolley locomotives in British coal mines.

British Wood Preserving Association.

The second annual convention of the British Wood Preserving Association will be held at Queen's College, Cambridge, on June 23, 24 and 25. Further information may be obtained from the Secretary, British Wood Preserving Association, 21, College Hill, London, E.C.4.

Thos. Cook & Son, Ltd. in South Africa.

Thos. Cook & Son (South Africa) Limited has opened a branch office in Pretoria, Transvaal, which is the latest link in the chain of more than 350 offices operated by Cook's and associated companies throughout the world. Mr. Eugene Van Wyk has been appointed manager of the branch.

Transport of Bicycles.

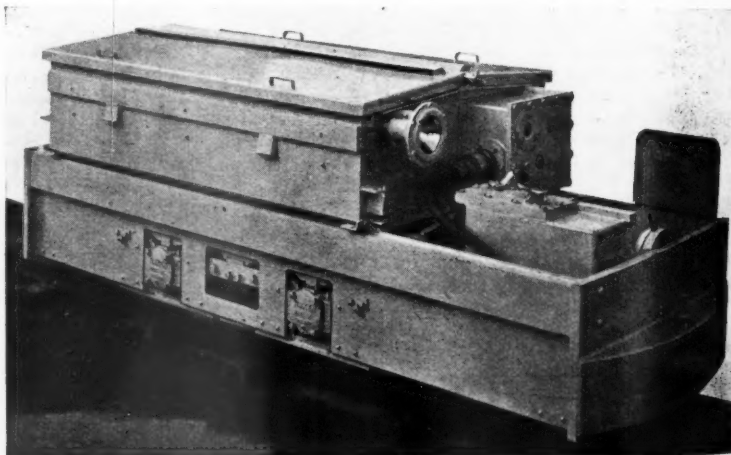
British Railways are to provide hanging space for two to six bicycles in brake vans and luggage compartments of the new standard passenger coaches. Metal hooks, covered with rubber or plastic, will be fitted to the roof to take the front wheel, and racks will be fitted to the inside of the coach to steady the bicycles and safeguard them during transit.

Imperial Chemical Industries Limited.

Imperial Chemical Industries Limited is raising £20,438,372 by an issue of ordinary shares to existing shareholders. The present I.C.I. proposal takes the form of a rights issue to ordinary stockholders of 10,093,023 new £1 ordinary shares at 40s. 6d. each in the proportion of one new share for each £6 of ordinary stock held. The issue will yield a gross sum of £20,438,372.

Naming Ceremony for British Railways Class "6" Locomotive.

The Lord Provost of Glasgow, Sir Victor D. Warren, formally named British Railways first Class locomotive *Clan Buchanan* at Glasgow Central Station on January 15. The locomotive is described in an article on page 101 of this issue. Mr. T. F. Cameron, Chief Regional Officer, Scottish Region, presided at the ceremony. Those present included Mr. R. A. Riddles, Member, Mr. R. F. Harvey, Chief Officer (Motive Power), and Mr. D. S. M. Barrie, Public Relations Officer, the Railway Executive, also Sir George H. Leith-Buchanan, President of the Buchanan Society. The first ten



Flameproof 7-ton Atlas battery locomotive built by Wm. Neill & Sons (St. Helens) Ltd., fitted with Metropolitan-Vickers electrical equipment

OFFICIAL NOTICES

DRAUGHTSMEN required. 5-day week. Pension Scheme in operation. Apply **GLOUCESTER RAILWAY CARRIAGE & WAGON COMPANY, Gloucester.**

PERUVIAN CORPORATION LIMITED. Required for the Southern Railway of Peru Sub-Accountant with some years' experience of railway accountancy and preferably with a knowledge of the Spanish language. Three years' Contract, renewable, liberal leave, passages paid. Apply to the Secretary, **PERUVIAN CORPORATION LIMITED, 144, Leadenhall Street, London, E.C.3.**

JUNIOR CIVIL ENGINEER required for maintenance and general construction work on the Central Railway of Peru (a mountain railway); residence would be at an altitude of 12,000 feet. Single man of about 24 to 26 years, of age preferred. Railway experience and/or knowledge of Spanish desirable but not essential. Apply to the Secretary of **THE PERUVIAN CORPORATION LTD., 144, Leadenhall Street, London, E.C.3.**

BOUND VOLUMES.—We can arrange for readers' copies to be bound in full cloth at a charge of 25s. per volume, post free. Send your copies to the **SUBSCRIPTION DEPARTMENT, Tophill Press Limited, 33, Tophill Street, London, S.W.1.**

JUST PUBLISHED.—Twenty-Five Years of the North Eastern Railway, 1898-1922. By R. Bell, C.B.E., Assistant General Manager, N.E.R. and L.N.E.R. Companies, 1922-1943. Full cloth. Cr. 8vo. 87 pages. 10s. 6d.—**The Railway Gazette, 33, Tophill Street, London, S.W.1.**

engines of the Clan class are being named after Clans Cameron, Campbell, Frazer, MacDonald, MacGregor, Mackenzie, Macintosh, MacLeod, and Stewart; these names were selected in consultation with Scottish interests.

Closing of L.M.R. Stations.—The following stations in the London Midland Region of British Railways will be closed for passengers as from February 4: Standon Bridge, between Crewe and Stafford; Whitmore, between Crewe and Stafford; and Madeley, between Crewe and Stafford.

United Railways of Yucatan.—It is reported from Mexico that the employees of the United Railways of Mexico have asked the Mexican Government to buy out the British interest for £1,235,000 and to rebuild the system. British investors hold 49 per cent. of the stock.

South Wales Institute of Engineers.—The annual dinner of the South Wales Institute of Engineers was held at the Whitehall Rooms, Park Hotel, Cardiff, on January 17 at 7 p.m. Alderman Robert Bevan, Lord Mayor of Cardiff, proposed the toast "The South Wales Institute of Engineers and the President," and Professor Emeritus W. Norman Thomas, President, responded. The toast "The Industries of South Wales and Monmouthshire" was proposed by Captain H. K. Oram and responded to by Mr. W. F. Cartwright, and that of "Kindred Societies and Guests" was proposed by Mr. Sidney B. Haslam and responded to by Mr. R. J. Weeks.

Institute of Transport (Northern Ireland Section).—The monthly meeting of the Northern Ireland Section of the Institute of Transport was held in the U.T.A. headquarters, 21, Linenhall Street, Belfast, on January 16, the Chairman of the Section, Mr. J. W. Hutton, presiding. The guest speaker was Mr. R. L. Carter, Manager of British European Airways, Northern Ireland, who read a paper on air transport. After a discussion on the paper a vote of thanks, proposed by Mr. F. W. P. Hampton, and seconded by the Assistant Honorary Secretary, Mr. J. J. Woodrow, was passed. One of the members, District Inspector N. F. Sweeney, of the Transport

GRADUATE Electrical Engineers required to be trained as Designers of electrical equipment for diesel-electric locomotives. Practical workshop experience of manufacture and testing of this equipment preferred, together with good Honours Degree in Electrical Engineering. Age range 25-30 years. Good salary, prospects and facilities for advanced technical education. Excellent working conditions. Please reply in confidence to Box 351, **The Railway Gazette, 33, Tophill Street, London, S.W.1.**

CENTRE LATHE 11" x 10' between centres fully motorised as new condition; New Union G.15 12" Double Ended Grinder, motorised 400V 3Ph 50cc; Swiss Ruti Capstan 12" dia. bar through spindle, motorised 400V 3Ph 50cc; Heavy Duty Crankshaft Grinder 13" Height of centres 52" between, motorised; Robey Smith Gear Cutter up to 11½" cap motorised 400V 3Ph 50cc; Smith and Coventry Vertical Miller 56" x 14" table; Planing Machine 60" x 19" 24" between the uprights; New Velox 6" Hack saw motorised 400V 3Ph 50cc; Large Quantity of Belco 14" 4-Jaw Heavy Independent Chuck; Cleveland 6½" Spindle Automatic. All the above machines are available for immediate delivery, subject to prior sale. Enquiries will be dealt with promptly. Apply **MODERN MACHINE TOOLS LIMITED, Maudslay Road, Coventry.**

RAILWAY MAINTENANCE PROBLEMS. By H. A. Hull (late District Engineer, L.M.S.R.). Valuable information. With much sound advice upon the upkeep of permanent way. Cloth. 8½ in. by 5½ in. 82 pp. Diagrams. 5s. By post 5s. 3d. **The Railway Gazette, 33, Tophill Street, London, S.W.1.**

Section of the Royal Ulster Constabulary, was congratulated by the Chairman, on behalf of the Section, on receiving the O.B.E. in the New Year's Honours List. The annual dinner of the Section will be held on February 1, when the President, Mr. A. B. Valentine, and many other distinguished guests will attend.

Railway Clerks Recruiting Age.—The maximum age for recruitment of railway clerks has been raised by the Railway Executive from 30 to 45 years.

Crewe Gasworks Taken Over.—The North-Western Gas Board has taken over the Crewe gasworks and distribution system from British Railways, to whom it will pay £250,000.

British Railways Coal and Steel Carriages.—British Railways carried 400,510 tons of coal from deep-mined pits and open-cast sites last weekend; this makes a total of 3,187,470 tons for the week. The latest figures for iron and steel show that 192,784 tons were conveyed from the principal steelworks during the week ended January 12.

North Eastern Region Excursion Train Refreshment Service.—The North Eastern Region of British Railways is to provide a service of light refreshments on many Sunday half-day excursion trains which do not provide buffet facilities. Special accommodation will be set aside in the centre of the trains for staff and equipment, and the attendants will serve tea, sandwiches, cakes, and so on, to passengers in their compartments at refreshment room prices. The first train so serviced will be from Leeds City and Bradford Forster Square to Newcastle on January 27.

Collapse of Footbridge at Bury.—A domestic enquiry by British Railways, London Midland Region, was held on Tuesday, January 22, at Bury Knowsley Street Station to obtain evidence about the station footbridge which collapsed at 4.28 p.m. on Saturday, January 19, injuring approximately 175 people returning from a football match, who were crossing the bridge at the time for their train. Mr. R. O. Banister, Divisional Operating Superintendent, Manchester, presided, and Mr. F. Turton, Bridge & Steelwork Assistant

WE buy used or unserviceable Steel Files at good prices on lots of 2 cwt. or more.—**THOS. W. WARD LTD., Reusable Steel Dept., Albion Works, Sheffield.**

SENIOR DRAUGHTSMEN required by Locomotive firm manufacturing Steam, Diesel and Electric Locomotives. Locomotive experience desirable but draughtsmen with experience in Heavy Engineering products considered. Excellent Canteen facilities available. Staff Pension Fund. Apply to **THE VULCAN FOUNDRY LIMITED, Newton-le-Willows, Lancs.**

YOUNG ENGINEER wanted with commercial experience or leanings, or alternatively, young commercial man with technical leanings, for work overseas after training period. Applicant should be ambitious young man anxious to get on, and a good mixer. Work involves sale of engineering products to plantations, mines, contractors, etc., and offers excellent career to right man. Send typed application, with photograph, which will be returned, to Box 9325, **Frost-Smith Advs., 64, Finsbury Pavement, London, E.C.2.**

RAILWAY SIGNALLING AND COMMUNICATIONS INSTALLATION AND MAINTENANCE. A practical guide, especially intended to help Signal Inspectors, Installers, Fitters, Linesmen, Draughtsmen, and all concerned with installing and maintaining Signal, Telegraph, and Telephone Equipment. 416 pp. Many illustrations. Cloth. 8s. By post 8s. 6d. **The Railway Gazette, 33, Tophill Street, London, S.W.1.**

to the Civil Engineer, and Mr. A. Tims, District Engineer, with their assistants, were present. A Ministry of Transport enquiry will be held at Bury next Tuesday, January 29.

Leeds Hotel Sold.—The Great Northern Hotel, Wellington Street, Leeds, owned by British Railways, has been sold privately by the Hotels Executive to the Home Brewery Co. Ltd., of Nottingham.

Coal-Burning Gas Turbine.—The gas-turbine unit built by Allis-Chalmers for Bituminous Coal Research Inc., U.S.A., which has been running for some time on oil fuel, has now been sufficiently developed in regard to the pulverisation and combustion apparatus for a demonstration to be made on pulverised coal.

West of India Portuguese Guaranteed Railway Stock.—A line of the capital stock of the West of India Portuguese Guaranteed Railway is on offer at 86. Under the terms of the concession the Portuguese Government guarantees a sum sufficient to provide a dividend of 5 per cent., a rate that has been regularly paid, though the company has paid additional dividends according to the profits earned in excess of the amount of the guarantee. In recent years the extra distribution has been 1 per cent. made possible by drawing on accumulated profits. The earnings position has deteriorated partly because of the imposition of profits tax and partly because of the rise in working expenses. The line is operated by the Madras & Southern Mahratta Railway—taken over by the Indian Government in 1944—on the basis that the working expenses of the combined system are borne by both companies in proportion to gross earnings. The allocation of earnings and expenses is under review.

Visit to Wire Brush Works.—Last week representatives of the technical press visited the Park Royal works of A. Luson & Sons Ltd. This firm, which makes Gem wire brushes, was established in 1894, although at that time the applications of wire brushes were limited. The demand for them became established with the advent of the modern machine tool. The same firm pioneered the design of the

power wire rotary brush in this country. Today the works produce more than 500 types of brush. The growth of the firm has been continuous since its foundation, and after the 1914-18 war every twelve months showed an increase in turnover as against the previous year. During the ten years 1939-49 production was trebled, and since 1949 it has shown a 50 per cent. increase. Another recent development has been the purchase by the company of the British rights of a French invention consisting of a rubber-bonded wire brush which it is claimed has a life three to four times as long as earlier designs. This new brush is known as the Vulcan, and it should be in production this year.

North Skelton Station Closing.—Because North Skelton Station parcel and freight services are being maintained at a considerable loss the North Eastern Region has decided to withdraw these facilities as from February 1. Parcels and freight traffic will be dealt with at Brotton and a collection and delivery service for parcels and sundries freight traffic will be operated by Railway Executive vehicles.

Forthcoming Meetings

- January 26 (Sat.).—British Railways, Southern Region, Lecture & Debating Society. Visit to British Railways' Police College, Tadworth.
- January 26 (Sat.).—Railway Students' Association. Inspection of platform and parcels work, and signalbox at Liverpool Street.
- January 26 (Sat.).—Permanent Way Institution, Annual Winter Meeting, at the Institution of Civil Engineers, Great George Street, Westminster, S.W.1, at 2.30 p.m. Annual Winter Dinner, at the Railway Executive headquarters, 222, Marylebone Road, N.W.1, at 5.45 for 6.15 p.m.
- January 29 (Tue.).—Institution of Civil Engineers, Great George Street, S.W.1, at 5.30 p.m. Discussion: Continental Railway Civil Engineering Practice. "Observations on a visit to French Railways in 1949," by Mr. R. G. Thurtle, and "Observations on a visit to the Netherlands Railways in 1950," by Mr. J. G. F. Inglis.
- January 31 (Thu.).—British Railways, Western Region, London Lecture & Debating Society, in the Clerks' Dining Club, Bishops Bridge Road, W.2, at 5.45 p.m. "The Work of the Motive Power Department," by Mr. W. N. Pellow, Motive Power Superintendent, Western Region.
- February 1 (Fri.).—Institute of Transport, Northern Ireland Section, at the Midland Hotel, Belfast, at 6.45 p.m. Annual Dinner and visit of President.
- February 2 (Sat.).—Historical Model Railway Society, at the headquarters of the Stephenson Locomotive Society, 32, Russell Road, W.14, at 3 p.m. "More Railway Reminiscences," by Mr. J. N. Maskelyne.
- February 4 (Mon.).—Institute of Transport, Metropolitan Section, at 80, Portland Place, W.1, at 5.30 for 6 p.m. Symposium on "Railway Transport in the U.S.A.," by Mr. A. Dean (Engineering), Mr. F. Gilbert (Labour), Mr. S. G. Hearn (Operating) and Mr. A. C. B. Pickford (Commercial).
- February 4 (Mon.).—Society of Engineers, in the apartments of the Geological Society, Burlington House, W.1, at 5.30 p.m. Presidential Address, by Mr. R. S. V. Barber.

Railway Stock Market

Although there has been some recovery, industrial shares recorded further declines on balance, and in contrast with the latter, British Funds have strengthened in price. Gilt-edged stocks are attracting because it is being widely assumed there will be no further increase in the Bank rate, and because this section of markets should be helped if the Government succeeds in its anti-inflation policy. Moreover the decisions taken by the Conference of Commonwealth Finance Ministers will probably mean that in the second half of the year there will be an up-trend in sterling area gold and dollar reserves. On the other hand industrial shares are overshadowed by the knowledge that drastic measures will be proposed by the Government next month for dealing with inflation and for diverting supplies of essential materials to rearmament and export trade needs. This means that some companies face a difficult period owing to smaller supplies for the home trade, and, moreover, the dividend outlook of many companies is not easy to assess until E.P.T. details are announced, which is not expected before the Budget. Nevertheless, although the Budget probably has to be awaited until the outlook becomes clearer, it would seem that the recent fall in share values has been indiscriminate.

Large new issues have helped the down-trend in markets as they have led to selling to obtain money to take up new shares. An Imperial Chemical offer of over 10 million new shares at 40s. 6d. each—one for every six held—will bring in nearly £20½ million. Many other important new issues are being planned, although most of these it is thought will be left until after the Budget, when markets will be better able to look ahead, and when dividend prospects of individual companies will be easier to assess because E.P.T. details will be known.

Uncertainty in markets has diverted more attention to foreign and overseas securities. German and Japanese Bonds have been prominent and Rhodesian copper shares and Canadian securities also featured. Canadian Pacific were active around 72, though both the preference and debenture stocks eased, despite their apparently attractive yields. There was again a fair amount of activity in Antofagasta stocks, with the ordinary up to 18, though

the preference at 70½ has not held best levels. There has been some switching from the preference into the ordinary, on the assumption that, taking the long view, the latter may now have the larger scope for capital appreciation. Nevertheless, there is no prospect of an ordinary dividend unless the capital is reorganised, and the trend in the ordinary stock will probably be determined a good deal by that in traffic receipts.

United of Havana stocks were active, but have not held best levels; the 1906 debentures were 18. The proposal to reorganise the capital, though unexpected, may prove a favourable move, because it could make it easier to agree on compensation terms should take-over developments arise.

Leopoldina stocks were firm with the ordinary and preference at 11½ and 28½ respectively, and the 6½ per cent. debentures 150½. Leopoldina Terminal 5 per cent. debentures eased to 109 and the ordinary units were 1s. 9d. Nitrate Rails were 23s. 6d. and Taltal 17s. 6d. Manila "A" debentures held steady at 72 and the preference shares were 7s. 1½d.

Road transport shares have remained steady, with Southdown at 96s., West Riding 42s., and Lancashire Transport 53s. 9d. B.E.T. deferred stock receded further to £410.

Engineering and kindred shares have again participated in the downturn in markets although in most cases there are good prospects of dividends being maintained. Guest Keen, at 50s. 9d., showed some recovery, the good yield bringing in buyers. Vickers were 43s. 6d., John Brown 45s. 3d., T. W. Ward 71s., Ruston & Hornsby 31s. 9d., and Babcock & Wilcox 66s. 9d. Imperial Chemical fell to 41s. 6d. on the big new issue, but later firmed up to 41s. 9d. B.S.A., at 32s. 9d., reflected new issue talk. G.E.C., at 84s., were also affected by talk of a coming issue. Associated Electrical at 74s. 6d. rallied a little on further consideration of the share offer terms and the directors' forecast that the dividend should be maintained on the larger capital.

Among locomotive builders and engineers, Hurst Nelson eased to 56s., and Birmingham Carriage were back to 34s. Vulcan Foundry were 21s. 10½d., North British Locomotive 16s. 3d., Beyer Peacock 31s. 7½d., Gloucester Wagon 13s. 3d., Wagon Repairs 5s. shares 10s. 3d., and Charles Roberts 21s. 1½d.

Traffic Table of Overseas and Foreign Railways

Railway	Miles open	Week ended	Traffics for week		No. of weeks	Aggregate traffic to date	
			Total this year	Inc. or dec. compared with 1949/50		Total 1950/51	Increase or decrease
Central & S. America	Antofagasta ...	811	11.1.52	£ 158,790 + £ 57,330	2	£ 221,260 + £ 43,040	
	Costa Rica ...	281	Nov., 1951	cl 1,000,104 + c63,898	22	c5,947,406 + c650,137	
	Dorada ...	70	Nov., 1951	33,765 — 3,207	48	394,882 — 33,223	
	Inter. Ctl. Amer. ...	794	Nov., 1951	\$1,039,455 — \$19,932	48	\$11,978,007 — \$282,812	
	Paraguay Cent. ...	274	28.12.51	\$289,547 + \$102,688	26	\$2,823,911 + \$356,978	
	Peru Corp. ...	1,050	Dec., 1951	\$8,471,000 + \$1,124,000	26	\$49,271,000 + \$3,141,000	
	" (Bolivian Section)	66	Dec., 1951	Bs.19,282,000 + Bs.5,954,000	26	Bs.95,087,000 + Bs.25,173,000	
	Salvador ...	100	Oct., 1951	cl 14,000 + c27,000	18	c95,000 + cl 40,000	
	Taltal ...	147	Dec., 1951	\$2,157,000 + \$721,900	26	\$12,277,000 + \$3,020,200	
	Taltal ...	147	Dec., 1951	\$2,157,000 + \$721,900	26	\$12,277,000 + \$3,020,200	
Canada	Canadian National†	23,473	Nov., 1951	18,035,000 + 403,000	48	190,178,000 + 22,295,000	
	Canadian Pacific†	17,037	Nov., 1951	12,638,000 + 938,000	48	131,106,000 + 16,187,000	
Various	Barsi Light* ...	167	Nov., 1951	37,957 + 6,607	33	284,050 + 40,667	
	Egyptian Delta ...	607	10.4.51	17,513 — 267	4	17,513 — 267	
	Gold Coast ...	536	Nov., 1951	347,307 + 38,503	34	2,095,480 + 135,872	
	Mid. of W. Australia ...	277	Oct., 1951	72,767 + 30,311	18	242,663 + 89,350	
	South Africa ...	13,398	22.12.51	2,030,729 + 61,123	38	73,132,747 + 7,896,480	
	Victoria ...	4,744	Oct., 1951	2,172,730 + 1,149,080	17	—	

* Receipts are calculated at 1s. 6d. to the rupee

† Calculated at \$3 to £1

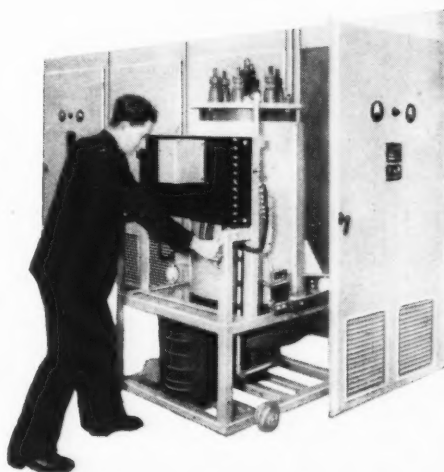
‡ Aggregate receipts for eleven days, compared with fourteen days in 1951



Metrovick see traction power supply problems with the eyes of traction engineers. Development of Metrovick mercury-arc rectifiers for traction service has been guided by the company's long experience in the design and building of road and rail traction equipment. The pumpless steel tank mercury arc rectifier is rapidly becoming standard equipment for traction purposes and Metrovick can supply not only the rectifiers but also switchgear, transformers and auxiliary equipment — all designed as a complete scheme.



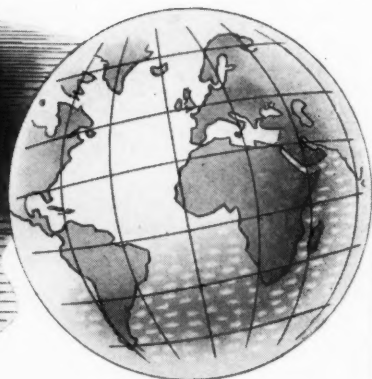
Metrovick pumpless steel tank rectifiers are available for any desired rating. The original Metrovick feature of design allows for easy withdrawal from the cubicle on roller carriage.



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*Giving reliable Service on
Famous Locomotives in all
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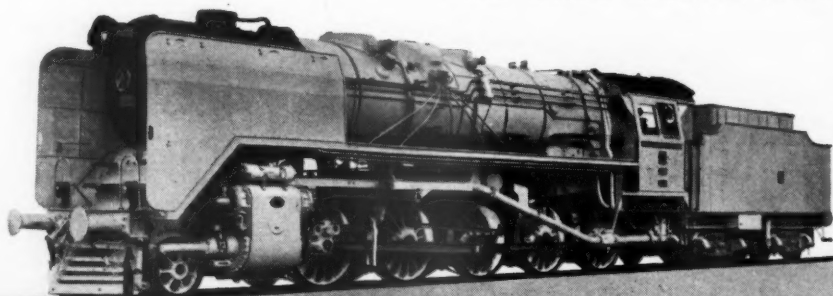
As fitted to L.M. Region
Pacific Locomotive
"City of Salford"—an
outstanding example on
British Railways.

(Photograph by courtesy
of British Railways).

EXHAUST STEAM Injectors

Turkish State Railways
2-10-0 Locomotive built
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Ltd., and fitted with
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Exhaust Steam Injector

The only practical and successful feedwater
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Over 30,000 Locomotives fitted.



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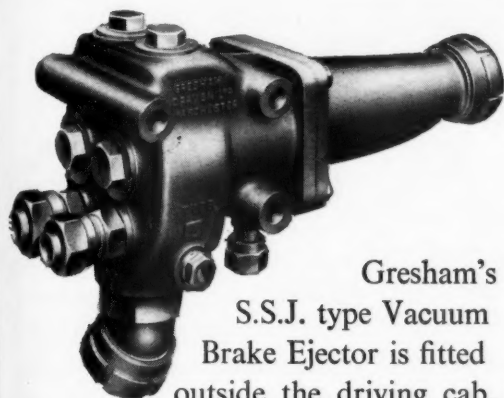
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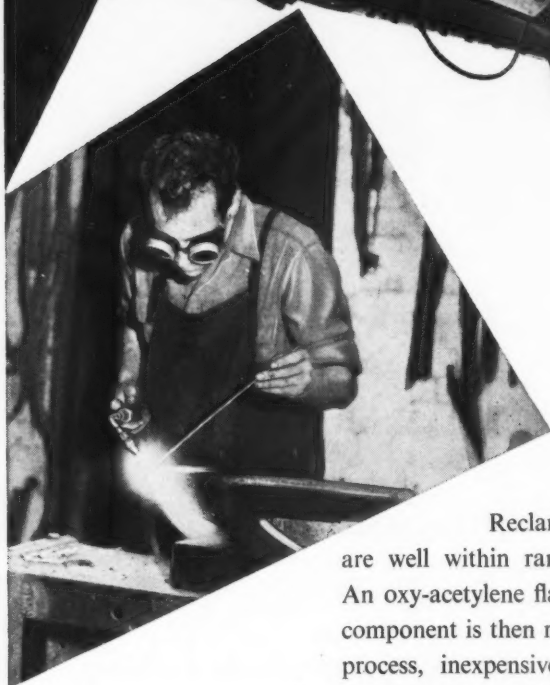
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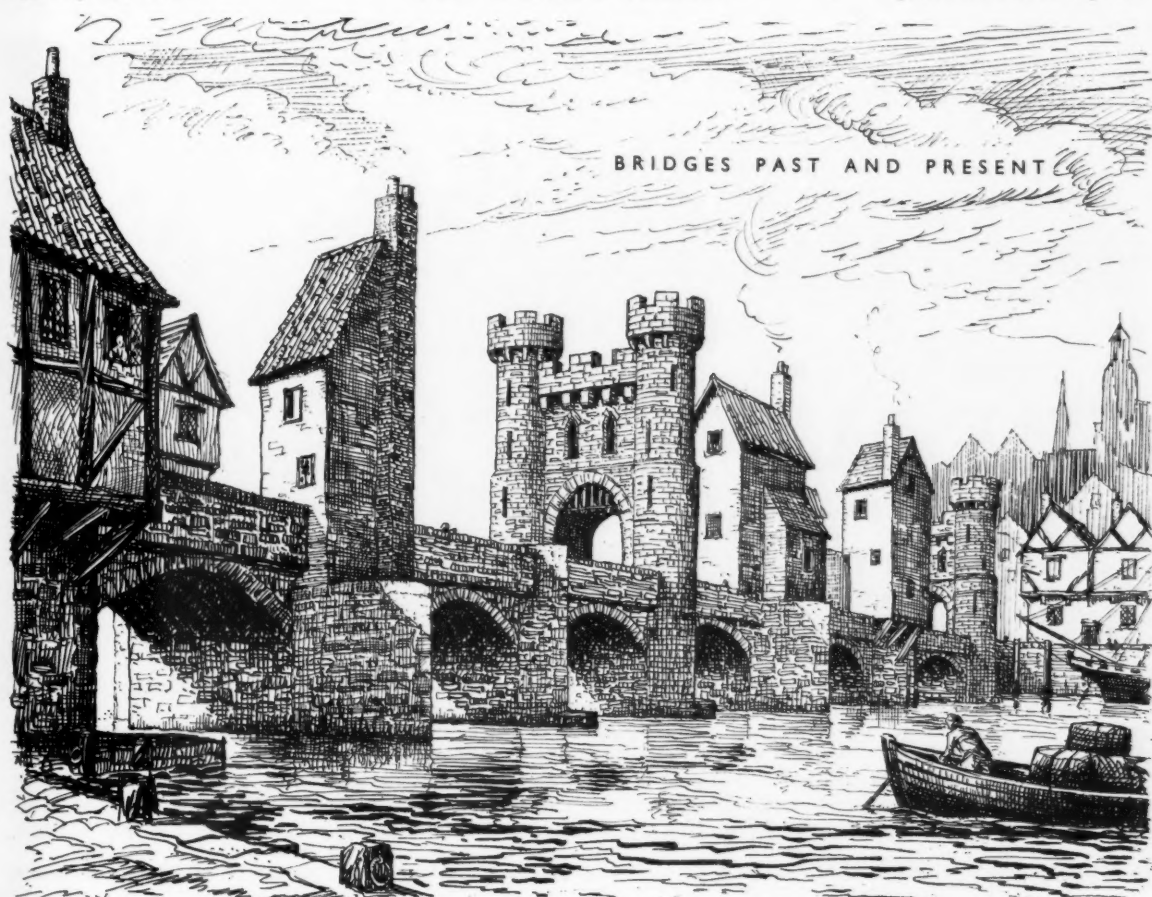
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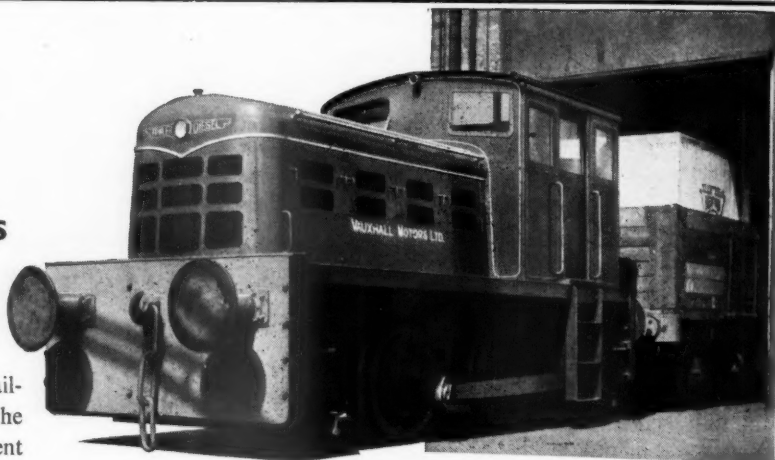
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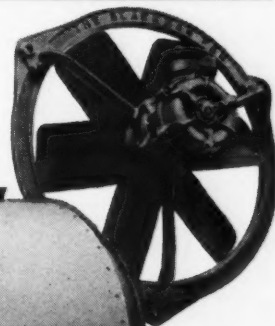
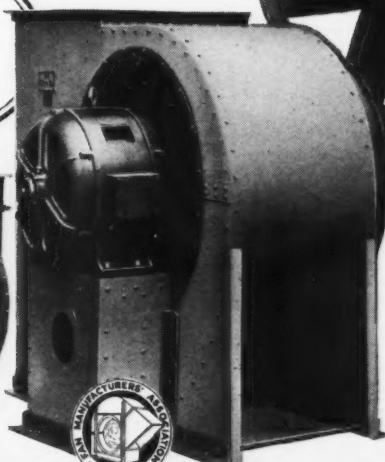
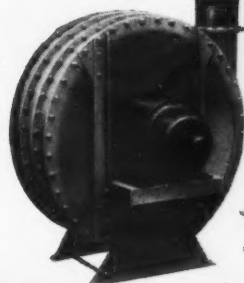
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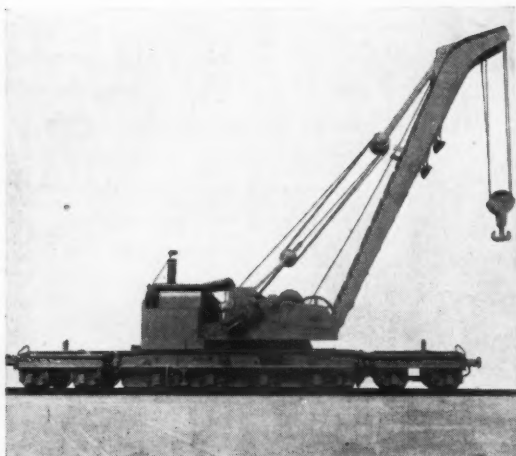
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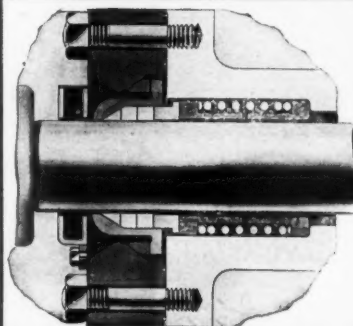
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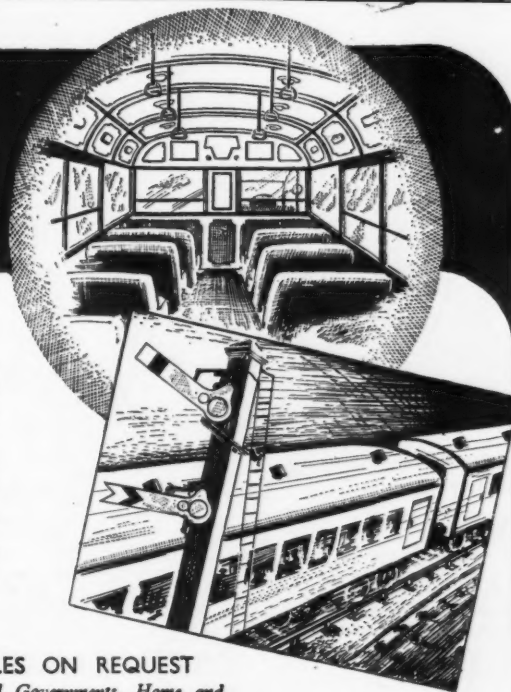
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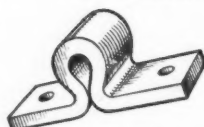
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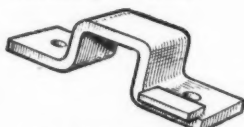
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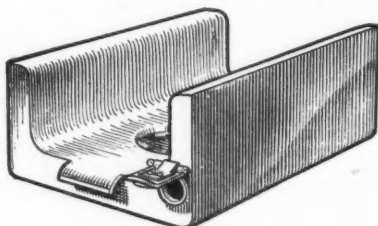
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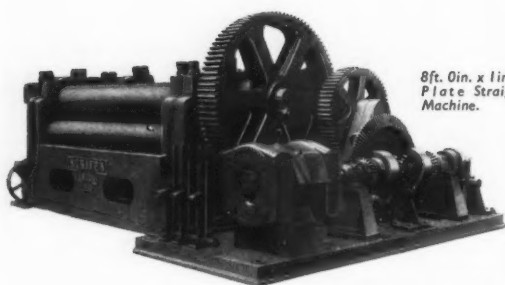
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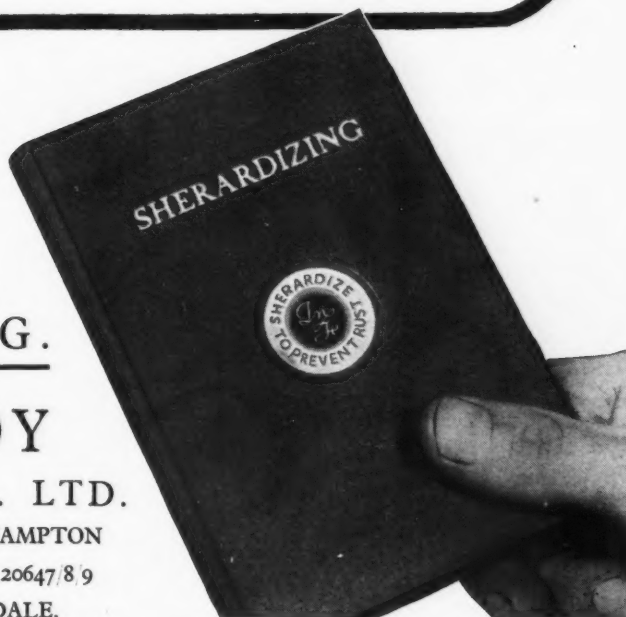
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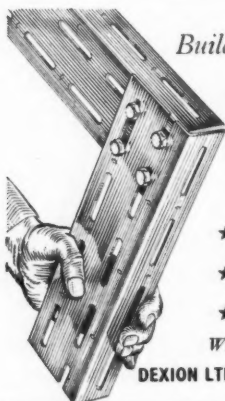
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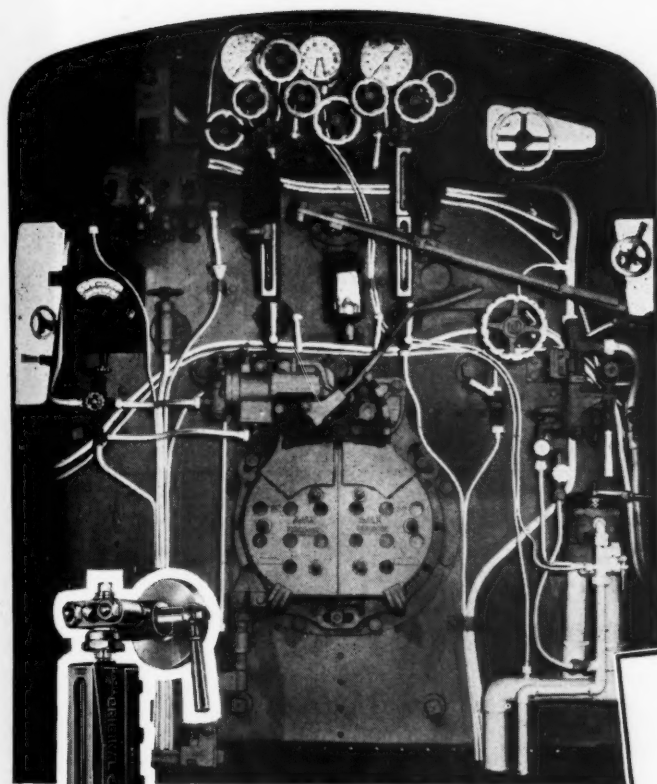
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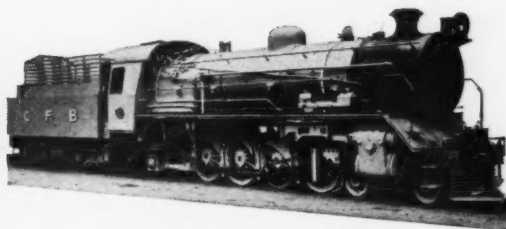
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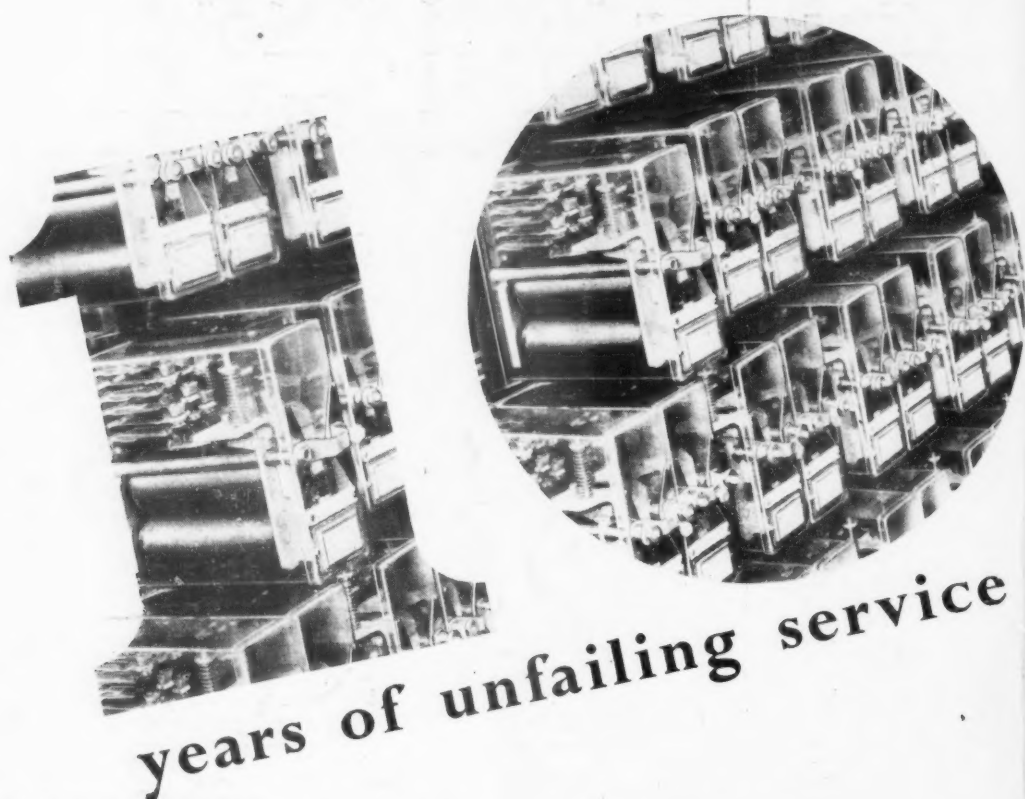
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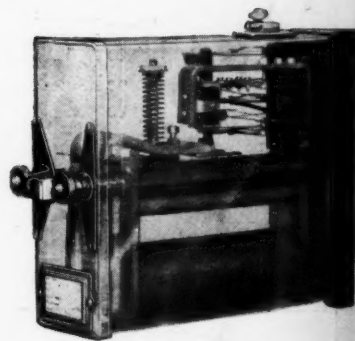
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